

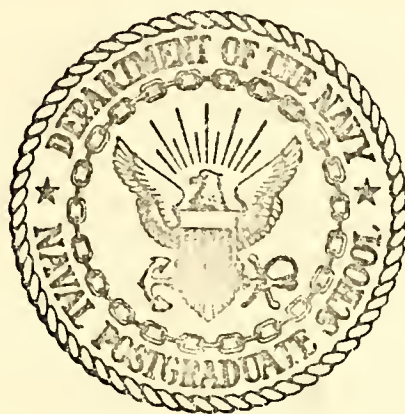
AN ANALYSIS OF NAVY BACHELOR HOUSING USER
REQUIREMENTS

Hugh Phillip Mouser

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THESIS

AN ANALYSIS OF NAVY BACHELOR HOUSING

USER REQUIREMENTS

by

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September 1973

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An Analysis of Navy Bachelor Housing User Requirements

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MASTER OF SCIENCE IN OPERATIONS RESEARCH

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September 1973

ABSTRACT

Three hundred and thirty-one Navy bachelors (both male and female) were interviewed to determine attitudes toward, preferences, and current satisfaction with, bachelor housing. Questionnaires were administered and interviews conducted at five West Coast Naval installations. Satisfaction indices were quantified from questionnaire responses to pinpoint critical areas for consideration in future housing design and construction.

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I. INTRODUCTION

The approach to design of quarters has in the past, emphasized cost considerations and conventional or traditional building methods, and all too often disregarded user requirements and desires [10]. Designers and planners appear to have failed in the investigation of the needs of users and, in general, have dictated user requirements. Little information flow exists between the users of the quarters and the planners and designers [4]. There has, in the past, been little or no observation of user activity in living spaces provided for bachelor service men [10]. Consequently, the standardization of appearance and lack of variety in choice are unappealing to the user and produce boredom, disenchantment and discontent [11]. This annoyance and dissatisfaction with the living environment has become widespread and is a major cause of decreased productivity in any occupation where minor errors are of major importance [8]. Attitudes of servicemen are extremely sensitive to living conditions. Presently their attitudes are being given a minimal amount of attention [2]. Changing times, attitudes, incomes and lifestyles must be considered in the planning and design of living quarters. Presently, service quarters set the user apart from non-military residents and destroy the user's sense of belonging to the community [12].

Housing must do more than provide shelter. At present, quarters are designed only as a storage bin from which a required number of working men may be drawn as needed and returned to storage when their assigned task is completed [7]. Little or no attention is being paid

to human requirements and desires in the design of these "storage bins". Major attention is, however, being given to design and engineering of electronics, weapons systems and new equipment. This new equipment, however, can be expected to operate at reduced efficiency if no attention is given to the design and planning of the quarters where the operators of this equipment must live [2].

A person identifies with his surroundings and projects his personality and attitudes as a part of his surroundings. His living quarters should, therefore, communicate his attitudes and feelings to his associates [5].

In the planning of quarters for bachelor service personnel, the layout, organization and design must be of major importance. Presently a lack of human factors data due to non-observation and lack of communication with the users of the quarters makes the incorporation of proper planning and design techniques infeasible. Architects must now only guess at what the individual user requires [1]. Consequently, designs are developed according to tradition, the designer's idea of what is required, or for ease in fulfilling a design contract.

In order to produce a favorable attitude among bachelor service personnel towards their living quarters, attention must be given to the varied requirements and needs of the individual user of the quarters provided [9]. Future planning must include information obtained from the users themselves. Adapting the quarters to the occupant is much preferred to forcing the occupant to adapt to the quarters [10].

Designers must rely upon observation and analysis of behavior in the quarters, not upon intuitive design concepts evolved from practice or individual experience [6]. Surveys, interviews, and personal contact

with the users of living quarters are key steps in obtaining information about user requirements and attitudes toward the environment in which they live [3].

Related problems in the area of group housing have been studied in depth at several California universities and various governmental agencies [10, 11]. Though problems addressed in these studies bear a strong similarity to that of military bachelors occupying government quarters, this latter group (that of military bachelors) is unique and their housing needs require separate, thorough and continuing investigation.

To this end the Naval Facilities Engineering Command sponsored a research project with the Man-Machine Systems Design Laboratory of the Naval Postgraduate School. The purpose of this project was to conduct research in the area of current user satisfaction and user requirements in bachelor housing in an effort to determine critical areas of user satisfaction. This paper is a result of the Naval Facilities Engineering Command's concern and is the basis for a continuing study in this area.

II. DATA COLLECTION

A. FORMULATION OF QUESTIONNAIRE

The method selected for data collection was the administration of a questionnaire. Advantages realized were the large number of samples attainable, and uniformity of data collected. Invaluable assistance in the formulation of the questionnaire was rendered by Professor John E. Harrigan of California Polytechnic Institute and Professor Thomas A. Wyatt of the Naval Postgraduate School. The requests of the Naval Facilities Engineering Command were incorporated in the questionnaire with the assistance of CDR R. T. Field, CEC, USN. Some of the major areas considered in the questionnaire were selected from a taxonomy of design criteria provided by Professor Harrigan (Appendix A). The areas selected were:

1. Facility characteristics.
 - (a) User categories.
 - (b) Furniture and fixtures.
 - (c) Facility management plan.
 - (d) Safety and security.
2. User activity support.
 - (a) Storage unit design criteria.
 - (b) Adjacent facility requirements.
3. Site and location
 - (a) Facility orientation and adjacencies.

(b) Area and regional integration.

(c) Transportation interface.

In addition, the following areas were also selected for inclusion in the questionnaire.

1. Personal and individual privacy.

2. Messing facilities.

3. Building occupancy preferences.

(a) Room locations

(b) Pay grade of neighbors.

(c) Sex of neighbors.

4. Sociological concerns.

These areas were considered to be adequately comprehensive for this initial research of user requirements and satisfaction. It was decided at the onset of the research that the areas of sociocultural/ethnic character would not be included as these are areas under separate intensive investigation throughout all branches of the military service and were considered to be beyond the scope of this paper. All areas researched are shown in Appendix B, Survey Questionnaire.

B. ADMINISTRATION OF THE QUESTIONNAIRE

The questionnaire was personally administered to available bachelor personnel during trips by the thesis team members to NAS North Island, NAS Imperial Beach, NAS Moffett Field, NAS Lemoore, and the Naval Postgraduate School, Monterey, California. Personnel living both on-base and off-base were surveyed, as one of the objectives of the research was to compare the attitudes, requirements and current quarters satisfaction levels of these two categories. Groups ranging in size from five to thirty individuals completed the questionnaire under the direct supervision of one of the thesis team members. The purpose and intent of each question was explained by the team member and individuals were encouraged to respond in an honest and candid manner. Each respondent was assured that his or her comments and responses would be kept anonymous.

Following the administration of the questionnaire, open discussions were conducted to solicit further comments in areas in which the individuals felt further amplification was needed. During these discussions the team members noted the areas mentioned and the prevalent attitudes displayed by the respondents. It was thought that the informality of these discussions greatly enhanced the willingness of the participants to voice their opinions.

C. DATA REDUCTION

Data reduction was accomplished through the use of the Statistical Package for Social Sciences (SPSS) which is a packaged statistical computer program available in the W. R. Church Computer Center, Naval Postgraduate School. The team decided to use the computer because of the large number and length of the questionnaires used. Each response given in the questionnaire was treated as a separate variable thus giving a total of 135 variables or items of information from each individual who filled out the questionnaire. SPSS is considered to be ideally suited for analysis of questionnaire responses and the use of so many variables allowed the team to capitalize on the flexibility and full capabilities of SPSS.

Each questionnaire was coded in accordance with a standard format established by the team. This standard format allowed for the compilation of data and display of statistics for all responses given or for any selected set of responses needed by the team. It further permitted the cross tabulation of any two or three selected variables. For example, it was possible to selectively display information dealing with the satisfaction of personnel currently living on-base with messing facilities. This capability proved to be invaluable in the analysis of different preference and satisfaction levels between those individuals living on-base and off-base.

As this is the initial portion of an ongoing study for the Naval Facilities Engineering Command, the complete data base and the coding format will be maintained and passed on for further analysis and more detailed specific research as desired by the project sponsor.

III. DATA ANALYSIS

A. GENERAL

At the sponsor's request, the data base was divided into categories which would be most useful to the Naval Facilities Engineering Command. Specifically, this required separating the data into on-base and off-base personnel, male and female groups, and then further subdividing into the pay grade groupings of E-2 through E-4, E-5 and E-6 and O-1 through O-3. There were only two enlisted individuals interviewed in the grades E-7 or above and as such comprised a group of insufficient sample size. Also, at the direction of the sponsor, individuals in the grades of E-1 and O-4 were omitted. The grouping of individuals by grade and sex was made at the request of the Naval Facilities Engineering Command since different design and construction requirements are used for these various groupings. An additional separation between individuals living on-base and those living off-base was made by the thesis team so that a comparison of areas of importance and levels of satisfaction for the two categories could be made. The remainder of this section examines these pay grade groupings separately and the analysis follows basically the same format for each group.

First, a population profile presenting personal information for a particular group is presented.

Second, an analysis of the five most important areas of the environment (Appendix B, Page 119) is given. The method used to determine these five most important areas was to sum up the percentages of the

population who ranked an area either first, second or third most important. The ten areas presented in the questionnaire were ranked by these totals and the top five areas of most importance were selected for analysis. This ranking and ordering were also used to select the general facilities desired (Appendix B, Page 132) and the most popular leisure activities (Appendix B, Page 131) for the groups.

The third portion of the analysis compares satisfaction levels between the on-base and the off-base personnel in the five most important categories selected by the on-base individuals. General trends and differences will be discussed in this portion.

The fourth area is a detailed analysis of the five most important categories indicated by the on-base personnel. The analysis is developed through responses to questions throughout the questionnaire which are pertinent to each of these areas of importance

The fifth portion of the analysis includes responses to questions not related to the five most important areas.

Finally, each group is summarized by satisfaction levels and critical areas of importance.

Throughout the analysis there is reference to critical levels of satisfaction with various areas. Individuals were asked to indicate their current level of satisfaction with various areas on the following scale:

- 1 - Very dissatisfied
- 2 - Dissatisfied
- 3 - Indifferent
- 4 - Satisfied
- 5 - Very Satisfied

For purposes of the analysis, a mean satisfaction level of less than 3.0 was considered to reflect a general trend toward dissatisfaction for the group and was therefore termed a critical level.

B. E-2 THROUGH E-4 MALE PERSONNEL

1. Profile Data

		On-Base	Off-Base
<u>Station</u>	North Island	59	11
	Lemoore	69	21
	Moffett Field	37	19
	NPS	2	0
	Total	167	51
<u>Age</u>	Minimum	17 yrs.	18 yrs.
	Maximum	21 yrs.	29 yrs.
	Mean	20.12 yrs.	21.02 yrs.
<u>Education</u>	Grade School	9 (5.6%)	1 (2.0%)
	High School	118 (70.6%)	36 (70.6%)
	Trade School	4 (2.3%)	2 (3.9%)
	Less than 2 yrs. College	30 (17.9%)	7 (13.7%)
	More than 2 yrs. College	5 (3.0%)	4 (7.8%)
	College Graduate	1 (0.6%)	1 (2.0%)
<u>Rate</u>	E-2	58	7
	E-3	65	15
	E-4	44	29
<u>Time in Service</u>	Minimum	1 yr.	1 yr.
	Maximum	8 yrs.	10 yrs.
	Mean	1.91 yrs.	2.59 yrs.
<u>Time in BEQ</u>	Minimum	1 yr.	1 yr.
	Maximum	8 yrs.	8 yrs.
	Mean	1.69 yrs.	1.72 yrs.
<u>Career Intentions</u>	Leave the Service	92 (55.1%)	34 (66.7%)
	Remain in the Service	9 (5.4%)	1 (2.0%)
	Undecided	66 (39.5%)	16 (31.3%)

2. Comparison of Preference Rankings Between On-Base and Off-Base Male E-2 Through E-4 Personnel.

a. General

In comparison of those enlisted personnel of pay grades E-2 through E-4 living on-base and off-base, it was found that items of major importance to each group were very similar (Table I).

On-Base	Off-Base
1. Personal/Individual Privacy	1. Personal/Individual Privacy
2. Safety/Security	2. Safety/Security
3. Personal Storage Space	3. Furniture
4. Furniture	4. Personal Storage Space
5. Messing Facilities	5. Regulations/Policies

Table I

Preferential Rankings of Male E-2 Through E-4 Personnel

b. Privacy and Safety/Security.

In both groups, items ranked first and second, Personal Privacy and Safety/Security, were the same. The mean satisfaction index for Personal Privacy recorded for the on-base groups was, however, lower than that recorded for off-base personnel (2.09 vs 2.48), (Tables II, III). The standard deviation for the off-base group was larger than that of the on-base personnel (1.54 vs 1.16) with 30% of the off-base personnel responding satisfied or very satisfied, while only 19.3% of the on-base personnel indicated satisfied or very satisfied with Personal Privacy, (Tables IV, V).

The mean satisfaction index recorded for the second item listed by both groups, Safety/Security, was approximately the same, with that recorded for the on-base personnel being slightly lower (2.71 vs 2.76)

It was noted that, in the five most important items, the means satisfaction index was in all cases, lower for the on-base personnel than for the off-base personnel.

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	166	2.09	1.35	1.16
Safety/Security	166	2.71	1.54	1.24
Personal Storage	166	2.63	1.58	1.26
Furniture	166	2.68	1.25	1.12
Messing Facilities	166	2.64	1.42	1.19

Table II

Mean Satisfaction Statistics of Critical Areas
for On-Base E-2 Through E-4 Male Personnel

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	50	2.48	2.38	1.54
Safety/Security	51	2.76	1.78	1.33
Furniture	51	2.92	1.75	1.32
Personal Storage	51	2.73	1.80	1.34
Regulations/Policy	51	2.71	1.73	1.32

Table III

Mean Satisfaction Statistics of Critical Areas
for Off-Base E-2 Through E-4 Male Personnel

	Very Dis- satisfied	Dissat- isfied	Indif- ferent	Satis- fied	Very Sat- isfied
Personal Privacy	41.6%	28.3%	10.8%	18.1%	1.2%
Safety/Security	24.7%	25.3%	17.5%	27.7%	4.8%
Personal Storage	24.7%	25.3%	17.5%	27.7%	4.8%
Furniture	14.5%	36.1%	19.9%	25.9%	3.6%
Messing Facilities	22.3%	23.5%	25.9%	24.1%	4.2%

Table IV

Distribution of Responses for Critical Areas of
On-Base E-2 Through E-4 Male Personnel

	Very Dis- satisfied	Dissat- isfied	Indif- ferent	Satis- fied	Very Sat- isfied
Personal Privacy	42.1%	14.0%	14.0%	13.9%	16.0%
Safety/Security	27.4%	15.7%	13.7%	39.3%	3.9%
Furniture	23.5%	13.7%	15.7%	41.2%	5.9%
Personal Storage	29.4%	23.5%	13.7%	27.4%	5.9%
Regulations/Policy	25.5%	19.6%	21.6%	25.5%	7.8%

Table V

Distribution of Responses for Critical Areas of
Off-Base E-2 Through E-4 Male Personnel

c. Personal Storage Space

Personal Storage Space, listed as the thrid most important item by the on-base personnel, was listed fourth by off-base personnel. The mean satisfaction index recorded for the on-base personnel was lower than that recorded for the off-base group, (2.63 vs 2.73). It was noted, however, that over 50% of each group responded either dissatisfied or very dissatisfied for this category.

d. Furniture

The category listed fourth in importance by the on-base group and third in importance by the off-base group was Furniture. Again the mean satisfaction index of the off-base personnel was higher than that of the on-base group, (2.92 vs 2.68), as was the standard deviation, (1.32 vs 1.12). Only 37.2% of the off-base group indicated an index of dissatisfied or below, while 50.6% of the on-base group responded dissatisfied or very dissatisfied with present furnishings.

e. Messing Facilities and Regulations/Policy

Messing Facilities was listed as the fifth item of importance by the on-base personnel, with a mean satisfaction index of 2.64, with only 24.3% of those responding indicating satisfied or very satisfied with present messing facilities. Regulations and Policies was listed as fifth most important by E-2 through E-4 personnel living off-base, with a mean satisfaction index of 2.71.

3. Comparison of Satisfaction Levels Between On and Off-Base Male E-2 Through E-4 Personnel.

A comparison of the satisfaction levels recorded by both the on-base and the off-base personnel in the categories ranked as most important by the on-base personnel revealed a higher mean satisfaction index for the personnel living off-base in all categories (Figure 1). Although the mean satisfaction index was higher for off-base personnel in all categories, it was never above the critical level of 3.0 (Table VI).

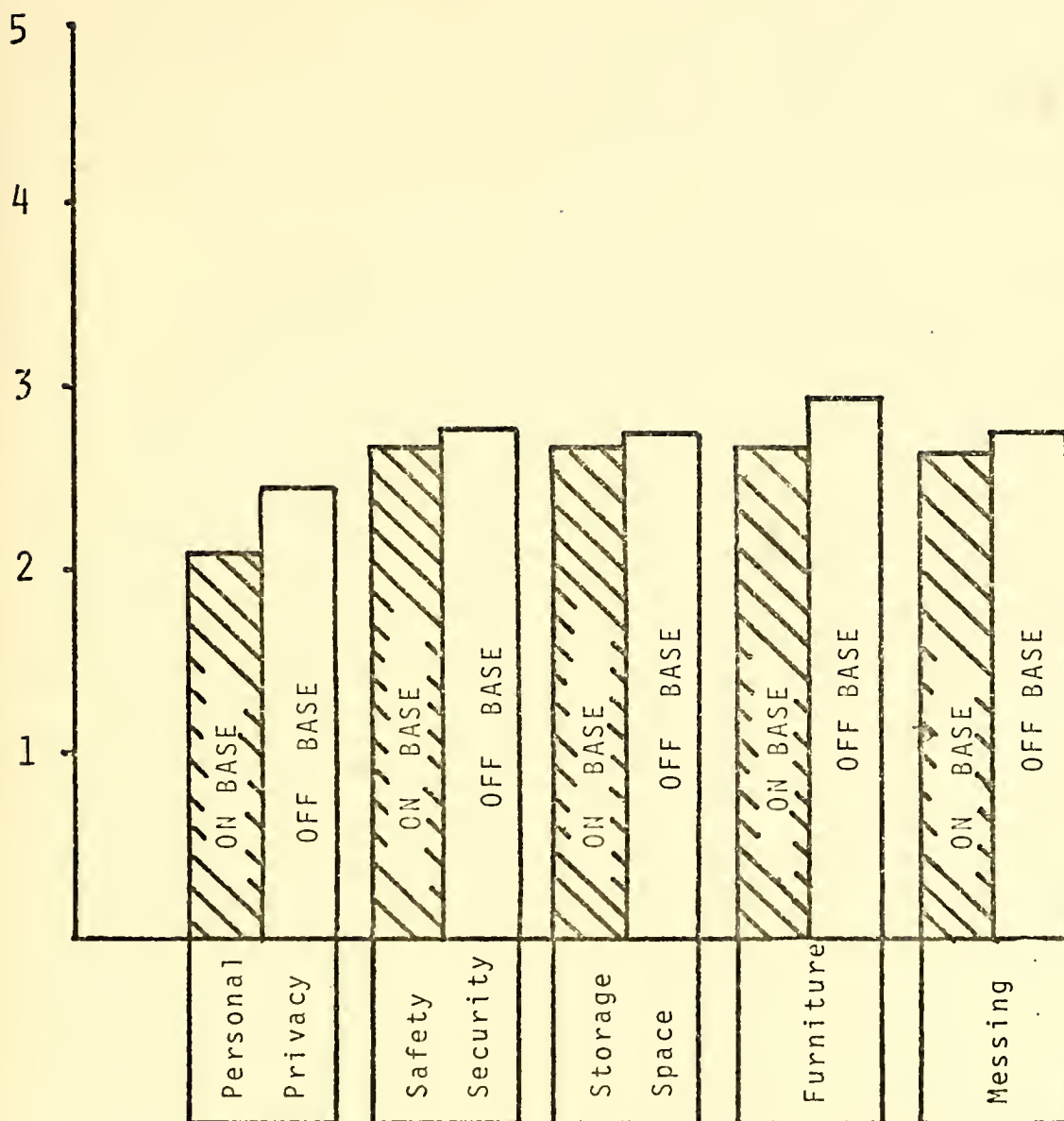


FIGURE 1 : Comparison of Satisfaction Levels
for On-Base and Off-Base E-2 Through
E-4 Male Personnel

	# In Sample		Mean		Variance		Std. Dev.	
	On	Off	On	Off	On	Off	On	Off
Personal Privacy	166	50	2.09	2.48	1.35	2.38	1.16	1.54
Safety/Security	166	51	2.71	2.76	1.54	1.78	1.24	1.33
Personal Storage	166	51	2.63	2.73	1.58	1.80	1.26	1.34
Furniture	166	51	2.68	2.92	1.25	1.75	1.12	1.32
Messing Facilities	166	51	2.64	2.74	1.42	2.97	1.19	1.73

Table VI

Comparison of Critical Area Statistics For
On-Base and Off-Base E-2 Through E-4 Male Personnel

This indicates that, although satisfaction with living quarters is improved by living off-base, dissatisfaction still exists in all categories. The highest satisfaction index recorded for off-base personnel was for the category of Furniture. The lowest recorded index for both groups was for the category of Privacy. However, this category revealed the greatest improvement in satisfaction between on- and off-base personnel with the mean satisfaction index rising from 2.09 for on-base personnel to 2.48 for the off-base personnel.

4. Detailed Analysis of Questionnaire Data For Critical Areas for Male E-2 Through E-4 On-Base Personnel.

a. Personal Privacy.

Personal Privacy was listed as the most important item by personnel living on-base and was noted as having the lowest mean satisfaction index of all items listed (2.09). Only 19.3% of the respondents indicated that that they were satisfied or very satisfied with privacy

presently available to the individual in on-base quarters, while the majority indicated that they were unhappy with present conditions. Percent responses are shown in Table VII.

Very dissatisfied	41.6%
Dissatisfied	28.3%
Indifferent	10.7%
Satisfied	18.1%
Very satisfied	1.2%

Table VII	
On-Base Male E-2 Through E-4 Personal/Individual Privacy Response	

Related to this dissatisfaction with personal privacy was the concern of the E-2 through E-4 respondents with the lack of an adequate place to receive and entertain guests in on-base living quarters. Here 91.1% of the E-2 through E-4 personnel ranked the opportunity to socialize or entertain in their quarters as desirable or highly desirable. Of the on-base personnel responding, 89.7% indicated the option of being alone or socializing in their quarters as desirable or highly desirable. Conversely, 33.6% of the group (E-2 through E-4) indicated that having only limited privacy was desirable or highly desirable. Responses in this sociological area are depicted in Figure 2.

Of the twelve items presented in the sociological portion of the questionnaire (Appendix B, Pages 127-129) 55.8% of the E-2 through E-4 groups living on-base listed the opportunity to socialize or entertain in their quarters as either the first, second or third most important item. The rankings were:

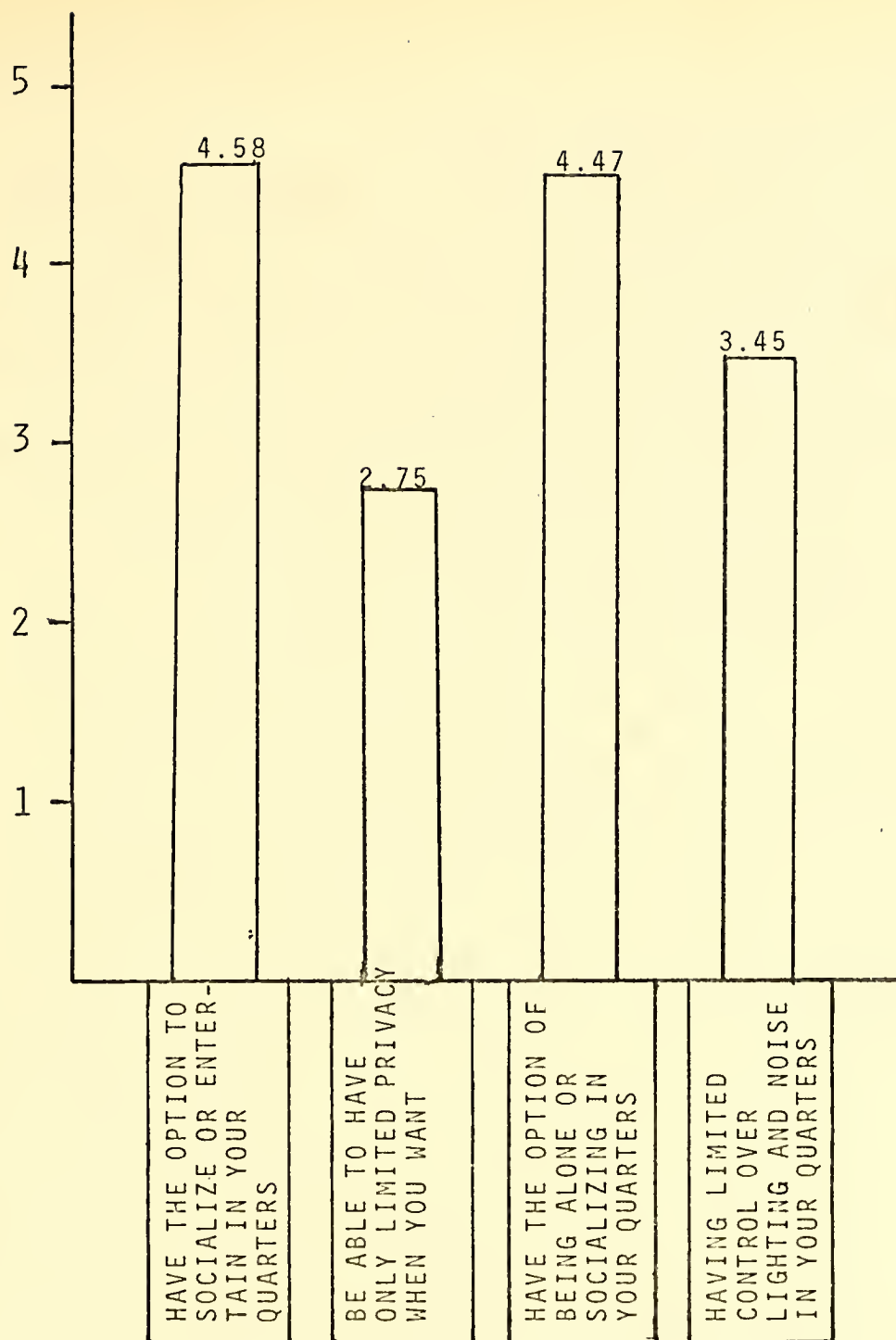


FIGURE 2 : Reaction to Questions Posed in
the Area of Personal/Individual
Privacy to On-Base E-2 Through
E-4 Males

	<u>First</u>	<u>Second</u>	<u>Third</u>
Socialize or Entertain	22.8%	18.0%	15.0%

Another item of concern to on-base personnel directly related to personal privacy was the limited control of noise and lighting available in present on-base living quarters. In this area 58.1% of the respondents indicated that control of noise and lighting was desirable or highly desirable. These rankings were:

	<u>Highly Desirable</u>	<u>Desirable</u>
Noise/Lighting Control	38.3%	19.8%

b. Safety/Security

The category listed by those E-2 through E-4 respondents living on-base as being second in order of importance was the Safety/Security of the living quarters. Here 36.0% of the on-base personnel felt that their present living quarters did not incorporate adequate safety precautions. Major reasons listed for lack of adequate safety precautions were:

- (1) Lack of adequate fire escapes
- (2) Lack of adequate fire fighting equipment
- (3) Non-availability of first aid kits
- (4) Inattention to corrective maintenance

Of the on-base personnel 72.3% felt that their present living quarters did not incorporate adequate security for their personal possessions. Major reasons listed for feeling a lack of adequate security were:

- (1) Inability of individual to lock room
- (2) Faulty or easily opened door locks

- (3) Easy access to room keys by unauthorized personnel
- (4) Faulty or non-existent window locks
- (5) Lack of adequate in-room lockable storage space
- (6) Lack of adequate security for cars, bicycles and boats

A prevalent comment by personnel interviewed was the inability to safeguard adequately personal possessions. The loss of personal articles through pilferage and theft was attributed to the lack of adequate security both in and around on-base living quarters.

Table VIII lists the vehicles owned by the male E-2 through E-4 on base respondents.

Item	Percent Owning Item
Automobile	63.5%
Motorcycle	21.0%
Bicycle	6.6%
Boat	1.2%

Table VIII	
On-Base Male E-2 Through E-4 Vehicle Ownership	

The large number of vehicles owned by on-base personnel (as indicated above) when parked near living quarters present an area attractive to would-be thieves. Providing well lighted, highly visible parking areas would enhance satisfaction in the area of Safety/Security.

c. Personal Storage Space

Storage Space was rated as the third most important category by the E-2 through E-4 personnel living on-base. Of those interviewed 50.6% responded that they were dissatisfied or very

dissatisfied with present storage space available while only 32.5% indicated that they were satisfied or very satisfied. The mean satisfaction index for the on-base personnel was 2.63 for Storage Space. (Table IX).

Very dissatisfied	25.3%
Dissatisfied	25.3%
Indifferent	16.9%
Satisfied	27.7%
Very Satisfied	4.8%

Table IX

On Base Male E-2 Through E-4 Personal Storage Satisfaction

In the E-2 through E-4 group, 51.4% indicated that bookshelves were highly desirable or desirable and 59.4% indicated that wall shelves for storage were highly desirable or desirable. The group also indicated that a chest of drawers for storage of personal articles was highly desirable or desirable. In addition, 64.7% indicated that being allowed to build book cases or shelves for personal items was desirable or highly desirable (Table X).

	Highly Desirable	Desirable
Book Shelves	18.0%	33.6%
Wall Shelves	27.0%	32.4%
Chest of Drawers	31.8%	34.2%
Being Allowed to Build Shelves	40.7%	24.0%

Table X

On-Base Male E-2 Through E-4 Storage Space Desirability

In listing personal articles owned, which would be stored in their room, the on-base E-2 through E-4 group indicated ownership of:

Item	Percent Owning Item
Television	38.9%
Record Player	37.1%
Tape Recorder	55.7%
Sports Equipment	41.9%
Record Collection	34.1%
Tape Collection	55.1%
Speakers	46.7%

d. Furniture

The category listed as fourth most important by the E-2 through E-4 personnel living on-base was Furniture. The mean satisfaction index for this category was 2.68 with 50.6% of the personnel indicating that they were very dissatisfied (14.5%) or dissatisfied (36.1%). Preferred items of furniture listed by more than 50% of the on-base group are shown in Table XI.

Item	Highly Desirable	Desirable	Total
Desk	39.6%	34.0%	73.6%
Chair (lounge)	37.7%	32.9%	70.6%
Refrigerator	45.5%	24.0%	69.5%
Hot plate	40.2%	22.2%	62.4%
Wall Shelves	27.0%	32.4%	59.4%
Sofa	29.4%	28.2%	57.6%
Wet bar	36.6%	16.8%	53.4%
Book case	18.0%	33.2%	51.2%

Table XI

On-Base Male E-2 Through E-4 Furniture Preferences

The majority of those responding to the desirability of these items indicated a preference for movable as opposed to built-in furniture.

In response to the type bed desired the following preferences were indicated:

(1) Single	40.1%
(2) Hide-a-bed (sofa)	20.4%
(3) Hollywood	18.5%
(4) Fold-cut (wall)	13.8%
(5) Bunk Beds	7.2%

Maintaining uniformity of furniture placement throughout the living facility was undesirable or highly undesirable by 52.1%, while only 17.4% indicated that uniformity was desirable or highly desirable (Table XII).

Highly undesirable	34.1%
Undesirable	18.0%
Indifferent	30.5%
Desirable	10.8%
Highly Desirable	6.6%

Table XII

On-Base Male E-2 Through E-4 Desirability for Uniform Furniture Placement

When interviewed, 77.2% responded that being limited to the use of only issue furniture to the exclusion of personally owned furniture, was undesirable (28.9%) or highly undesirable (48.3%).

e. Messing Facilities

Listed fifth in importance to the E-2 through E-4 on-base personnel was Messing Facilities. The mean satisfaction index

recorded for Messing Facilities was 2.64, with 45.8% indicating very dissatisfied or dissatisfied. The breakdown of responses was:

Very Dissatisfied	22.3%
Dissatisfied	23.5%

Personal messing preferences of messing facilities are indicated in Table XIII.

	Prepared by Self (Own Room)	Prepared by Others (Small Mess Hall)	(Large Mess Hall)
Breakfast	56.3%	34.3%	9.4%
Brunch	44.7%	44.7%	10.6%
Lunch	33.8%	47.0%	19.2%
Evening Meal	47.6%	36.3%	16.1%

Table XIII

On-Base Male E-2 Through E-4 Messing Preferences

5. Additional Information Pertaining to On-Base Male E-2 Through E-4 Personnel.

This section outlines additional questionnaire data not previously addressed. The items covered are fixtures preference, window coverings desired, bath type, building occupancy, building location, maintenance (self-help), leisure activities and facilities desired.

a. Fixtures

Item	Highly Desirable	Desirable	Total
Telephone (in room)	55.1%	22.8%	77.9%
Lavatory in room	52.1%	16.2%	68.3%
Intercom	28.7%	24.0%	52.7%
Movable Partitions	19.8%	21.6%	41.4%

b. Window Coverings

Curtains only	35.9%
Shades-Curtains	29.9%
Blinds-Curtains	26.3%
Shades only	3.6%
Blinds only	3.0%
No response	1.2%

c. Bath Type

Combination (Tub and Shower)	61.1%
Shower only	34.1%
Tub only	4.8%

d. Building Occupancy

E-2 through E-4 male personnel living on-base indicated a strong preference to live in a building occupied by both sexes (95.2%) while 47.3% indicated a preference to live in a building occupied by members of all pay grades. Additionally 43.7% preferred to live in a building occupied by only members of approximately the same pay grades, and 9.0% preferred to live in a building occupied only by members of their same pay grade.

e. Quarters Location

Preference for location of quarters was expressed as follows:

Off-base in local community	48.7%
On-base near base facility	25.9%
Off-base near gate	11.5%
On-base near gate	9.1%
On-base near work	4.8%

Preference for quarters on the ground floor was 50.9% and for quarters above the ground floor was 49.1%.

f. Maintenance (self-help)

Of those interviewed, 92.1% felt that individuals should be held responsible for intentional damage to living quarters.

Additionally, 56.3% indicated voluntary participation in self-help programs to work in their personal area only, while 37.1% would fully participate and 6.6% would not participate in any self-help program for living quarters. With respect to exterior maintenance, 50.9% expressed a desire to have no up-keep responsibility.

g. Leisure Activities

In response to leisure activities, the five most frequently listed items in order of preference were:

- (1) Music (listening - playing)
- (2) Social activities
- (3) Pool/Billiards
- (4) Swimming
- (5) Watching T.V.

h. Facilities

The five facilities listed most frequently by the E-2 through E-4 male personnel living on-base in order of preference were:

- (1) Laundry facilities
- (2) Swimming Pool
- (3) Music room
- (4) Visitor's lounge
- (5) T.V. room

6. Summary of E-2 Through E-4 Personnel.

From the ten categories listed in the questionnaire (Appendix B, page 120) the respondents were asked to first indicate their degree of satisfaction and then rank the ten items in their order of importance.

the data from the E-2 through E-4 male personnel were then split into two groups, on-base and off-base personnel, and the responses of these two groups were compared.

For the on-base group the following five categories were indicated as most important by the 167 respondents in this group. Additionally their current satisfaction levels for each category are listed:

Category	Satisfaction Level
Personal/Individual Privacy	2.09
Safety/Security	2.71
Personal Storage Space	2.63
Furniture	2.68
Messing Facilities	2.64

Those categories selected by the off-base group (51 respondents) were:

Category	Satisfaction Level
Personal/Individual Privacy	2.48
Safety/Security	2.76
Furniture	2.92
Personal Storage	2.73
Regulations/Policy	2.71

Comparison of the above lists revealed the following:

- a. Items common to both groups are those of major concern to the E-2 through E-4 male population.
- b. Individuals living off-base have higher satisfaction
- c. Satisfaction levels even in the off-base group never rise above the critical (3.0) level.
- d. Although the satisfaction levels for personnel living off-base are higher than for on-base personnel, in almost all cases, the differences in these levels may not be substantial. Improvements

in on-base categories could favorably influence satisfaction levels to rise above off-base levels and hence increase the desirability of remaining in (or returning to) base housing.

The four categories common to both groups indicate areas where improvement in satisfaction levels will realize the greatest returns. Supporting evidence from the analysis of the remainder of the questionnaire details specific needs for improvement in current bachelor housing.

a. Personal/Individual Privacy

(1) Have the option of being alone or socializing when one desires.

(2) Have some control over lighting and noise in personal living space.

(3) Ability to entertain and receive guests in quarters.

b. Safety/Security

(1) Effect timely repairs on buildings and associated equipment.

(2) Provide adequate fire escapes and fire fighting equipment.

(3) Provide rooms with adequate in-room lockable personal storage space.

(4) Install tamper-proof door locks and initiate control over room key access to prevent unauthorized entry.

c. Personal Storage Space

The substantial increase in personally owned, highly pilferable items requires a major re-evaluation of personal storage space available to individual occupants. Such a re-evaluation must

include external storage requirements (such as for automobiles, motorcycles, boats, bicycles, etc.) as well as internal room requirements.

d. Furniture

(1) The strong desire from this group is for non-uniformity of furniture placement of a movable type.

(2) An explicit desire to be allowed to supplement room furnishings with personally owned items such as rugs, posters, bookshelves, etc., was expressed.

(3) The option of redecorating one's room was also listed as highly desirable.

C. E-5 AND E-6 MALE PERSONNEL

1. Profile Data

		On-Base	Off-Base
<u>Station</u>	North Island	7	9
	Lemoore	9	9
	Moffett Field	4	8
	NPS	<u>5</u>	<u>1</u>
	Total	25	27
<u>Age</u>	Minimum	20 yrs.	20 yrs.
	Maximum	43 yrs.	35 yrs.
	Mean	27.8 yrs.	23.1 yrs.
<u>Education</u>	High School	16 (64%)	12 (44.4%)
	Trade School	1 (4%)	1 (3.7%)
	Less than 2 yrs. College	4 (16%)	10 (37.1%)
	More than 2 yrs. College	2 (8%)	2 (7.4%)
	College Graduate	2 (8%)	2 (7.4%)
<u>Rate</u>	E-5	16	21
	E-6	9	6
<u>Time in Service</u>	Minimum	3 yrs.	3 yrs.
	Maximum	19 yrs.	16 yrs.
	Mean	8.84 yrs.	6.78 yrs.
<u>Time in BEQ</u>	Minimum	1 yr.	1 yr.
	Maximum	12 yrs.	11 yrs.
	Mean	5.08 yrs.	3.78 yrs.
<u>Career Intentions</u>	Leave the Service	9 (36%)	15 (55.6%)
	Remain in the Service	14 (56%)	9 (33.3%)
	Undecided	2 (8%)	3 (11.1%)

2. Comparison of Preference Rankings Between On-Base and Off-Base Male E-5 and E-6 Personnel.

a. General

This section discusses the five areas determined to be the most important to the on-base personnel (Tables XIV and XVI) and the five areas determined to be the most important to the off-base personnel (Tables XV and XVII). The two groups had four areas in common, although not ranked in the same order, within the top five areas. Rankings are shown in Table XVIII.

	Very Dissatisfied	Dissatisfied	Indifferent	Satisfied	Very Satisfied
Personal Privacy	20%	24%	12%	40%	4%
Safety/Security	24%	28%	12%	32%	4%
Furniture	0%	40%	8%	48%	4%
Regulations/Policies	28%	20%	12%	40%	0%
Personal Storage	16%	36%	8%	24%	16%

Table XIV

Distribution of Responses for Critical Areas of

On-Base E-5 and E-6 Male Personnel

	Very Dissatisfied	Dissatisfied	Indifferent	Satisfied	Very Satisfied
Personal Privacy	30.8%	11.5%	11.5%	15.4%	30.8%
Regulations/Policies	19.3%	3.8%	38.4%	15.4%	23.1%
Safety/Security	15.4%	30.8%	7.7%	38.4%	7.7%
Personal Storage	23.1%	23.1%	11.5%	19.2%	23.1%
Messing Facilities	7.7%	19.3%	15.4%	46.1%	11.5%

Table XV

Distribution of Responses for Critical Areas of

Off-Base E-5 and E-6 Male Personnel

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	25	2.84	1.64	1.28
Safety Security	25	2.64	1.66	1.29
Furniture	25	3.16	1.06	1.03
Regulations/Policies	25	2.64	1.67	1.30
Personal Storage	25	2.88	1.94	1.39

Table XVI

Mean Satisfaction Statistics of Critical Areas

For On-Base E-5 and E-6 Male Personnel

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	26	3.04	2.84	1.68
Regulations/policies	26	3.19	1.92	1.39
Safety/Security	26	2.92	1.67	1.30
Personal Storage	26	2.92	2.36	1.53
Messing Facilities	26	3.35	1.35	1.16

Table XVII

Mean Satisfaction Statistics of Critical Areas

For Off-Base E-5 and E-6 Male Personnel

On-Base	Off-Base
1. Personal Privacy	1. Personal Privacy
2. Safety/Security	2. Regulations/Policies
3. Furniture	3. Safety/Security
4. Regulations/Policies	4. Personal Storage
5. Personal Storage	5. Messing Facilities

Table XVIII

Preferential Rankings of Male E-5 and E-6 Personnel

b. Privacy

Both categories of personnel ranked privacy as the foremost area of importance to them. Insofar as their expressed satisfaction with the degree of privacy currently afforded them in their quarters is concerned, the off-base personnel showed a higher mean satisfaction index (3.04) than did the on-base personnel (2.84). While the off-base personnel had a greater number of satisfied responses (30.8% vs 4%), they also had a greater number of very dissatisfied responses (30.8% vs 20%). The percentages of responses on the interior of the scale are shown in Tables XIV and XVI.

c. Safety and Security

Safety and Security was the second ranked area of importance to the on-base personnel. The on-base personnel had a mean satisfaction index of 2.64 for this area while the off-base personnel expressed a mean of 2.92. Some 36% of the on-base and 46.1% of the off-base personnel were either very satisfied or satisfied with safety and security. On the other end of the spectrum, 52% of the on-base and 46.2% of the off-base personnel were either very dissatisfied or dissatisfied with their current safety and security.

d. Regulations and Policies

Regulations and policies pertinent to living quarters were ranked fourth in importance by the on-base personnel and second by the off-base personnel. The on-base satisfaction level was 2.64 compared to 3.19 for those off-base the lower mean for those on-base

can be attributed to 28% being very dissatisfied and 20% being dissatisfied.

e. Storage Space

Personal Storage space in living quarters was also among the top five areas for both groups and was ranked fifth for those on-base and fourth for the off-base personnel. The mean satisfaction index for the on-base personnel (2.88) was again lower than that for those off-base (2.96). These figures reflect that the responses leaned more toward dissatisfaction than toward satisfaction. The percentage breakdown of responses is shown in Tables XIV and XV.

f. Furniture

Furniture in quarters was ranked third by the on-base personnel and was not included in the top five areas for those off-base. The satisfaction index was 3.16, the highest of any of the areas for on-base personnel. No one in this group indicated a response of very dissatisfied.

g. Messing Facilities

The importance of messing facilities was ranked fifth for the off-base personnel and was not ranked in the top five areas of importance by the on-base personnel. The mean satisfaction index was 3.35, the highest of any of the areas for the off-base individuals.

h. Differences and Similarities

The list of areas of importance to both on-base and off-base personnel contain four common elements which is indicative

of the true importance of these areas to these individuals. The fact that personal privacy was ranked first by 60% of the off-base and 74.1% of the on-base personnel and overall first by both groups further signifies the importance of this area.

In each of the four common areas ranked by the groups (Table XVIII) the satisfaction index was higher for those living off-base. In no instance, however, was the satisfaction index higher than 3.35, meaning that the groups are not particularly satisfied overall with most of the five important areas. Further, four out of five areas for the on-base individuals (Table XVI) tend toward dissatisfaction rather than toward satisfaction. For those off-base, only two areas (Table XVII) tend toward dissatisfaction as evidenced by the mean satisfaction indices being less than 3.0.

3. Comparison of Satisfaction Levels Between Male E-5 and E-6 On-base and Off-Base Personnel.

A comparison of the satisfaction levels between the on-base and off-base personnel, in the five areas considered to be most important to those on-base, shows that the off-base individuals are generally more satisfied with the five areas (Figure 3 and Table XIX).

	#In Sample		Mean		Variance		Std. Dev.	
	On	Off	On	Off	On	Off	On	Off
Personal Privacy	25	26	2.84	3.04	1.64	2.84	1.28	1.68
Safety/Security	25	26	2.64	2.92	1.66	1.67	1.29	1.30
Furniture	25	26	3.16	3.04	1.06	1.32	1.03	1.15
Regulations/Policies	25	26	2.64	3.19	1.67	1.92	1.30	1.39
Personal Storage	25	26	2.88	2.96	1.94	2.36	1.39	1.53

Table XIX

Comparison of Critical Area Statistics

On-Base and Off-Base E-5 and E-6 Male Personnel

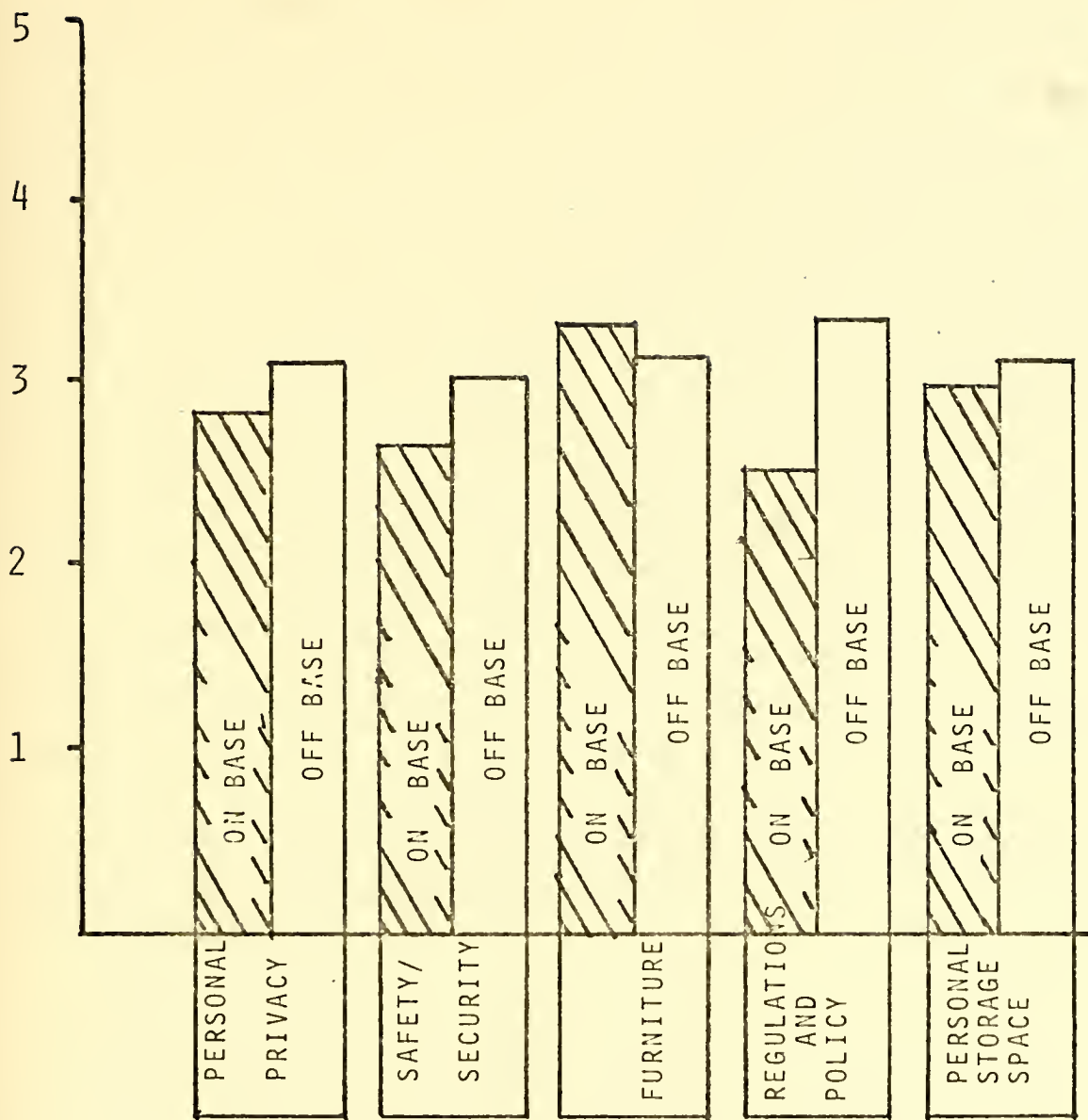


FIGURE 3: Comparison of Satisfaction Levels for On-Base and Off-Base E-5 and E-6 Male Personnel

In only one area, furniture, did those on-base show a higher satisfaction index. It is to be noted, however, that this area was not rated as one of the five most important areas by personnel living off-base. The off-base personnel registered satisfaction levels over 3.0 in the areas of Personal Privacy, Furniture and Regulations and Policies, whereas those on-base had only one satisfaction index over 3.0, which was the area of Furniture. These satisfaction levels then to substantiate the premise that the personnel living off-base are generally more satisfied with what they consider to be the most important aspects of their environment. Though the figures do not show a great deal of satisfaction for off-base individuals, the trend is toward satisfaction, whereas, the trend for the on-base individuals is towards dissatisfaction as evidenced by four out of five areas of importance having satisfaction levels below 2.90. It is noted that the lowest satisfaction index for both groups was in the area of Safety and Security.

4. Detailed Analysis of Questionnaire Data for Critical Areas of On Base E-5 and E-6 Male Personnel.

a. General

This section contains a detailed analysis of the responses of the E-5 and E-6 on-base personnel insofar as the previously mentioned five most important areas are concerned. Although the degrees of satisfaction have been stated, there are several other items in the questionnaire which are directly related to these areas. The responses to these items provide the basis for the following analysis.

b. Privacy

Privacy was listed as the foremost area of importance to the on-base group and the mean satisfaction index for this area was 2.84. The satisfaction responses by the group are shown in Table XX.

Very dissatisfied	20%
Dissatisfied	24%
Indifferent	12%
Satisfied	40%
Very Satisfied	4%

Table XX

On-Base Male E-5 and E-6 Individual/Personal Privacy Responses

The preference indicated for neighbors in quarters was 92% for members of both sexes and 8% for neighbors of only the same sex. Sixty percent (60%) desired neighbors of approximately the same pay grade, and 24% wanted neighbors of all pay grades. For floor preference, 56% wanted to live on the ground floor and 40% above the ground floor. Perhaps one of the most important questions related to privacy was the quarters location...The response was that 56% desired to live off-base.

Sociological concerns which are related to privacy, and to regulations and policies, were investigated. The population was given a set of statements concerning sociological concerns and was asked to rate these statements on a scale from (1) highly undesirable to (5) highly desirable (Appendix B, page 126). The options are listed and the responses shown in Figure 4. The responses to having limited control over the noise and lighting were mixed. It is thought

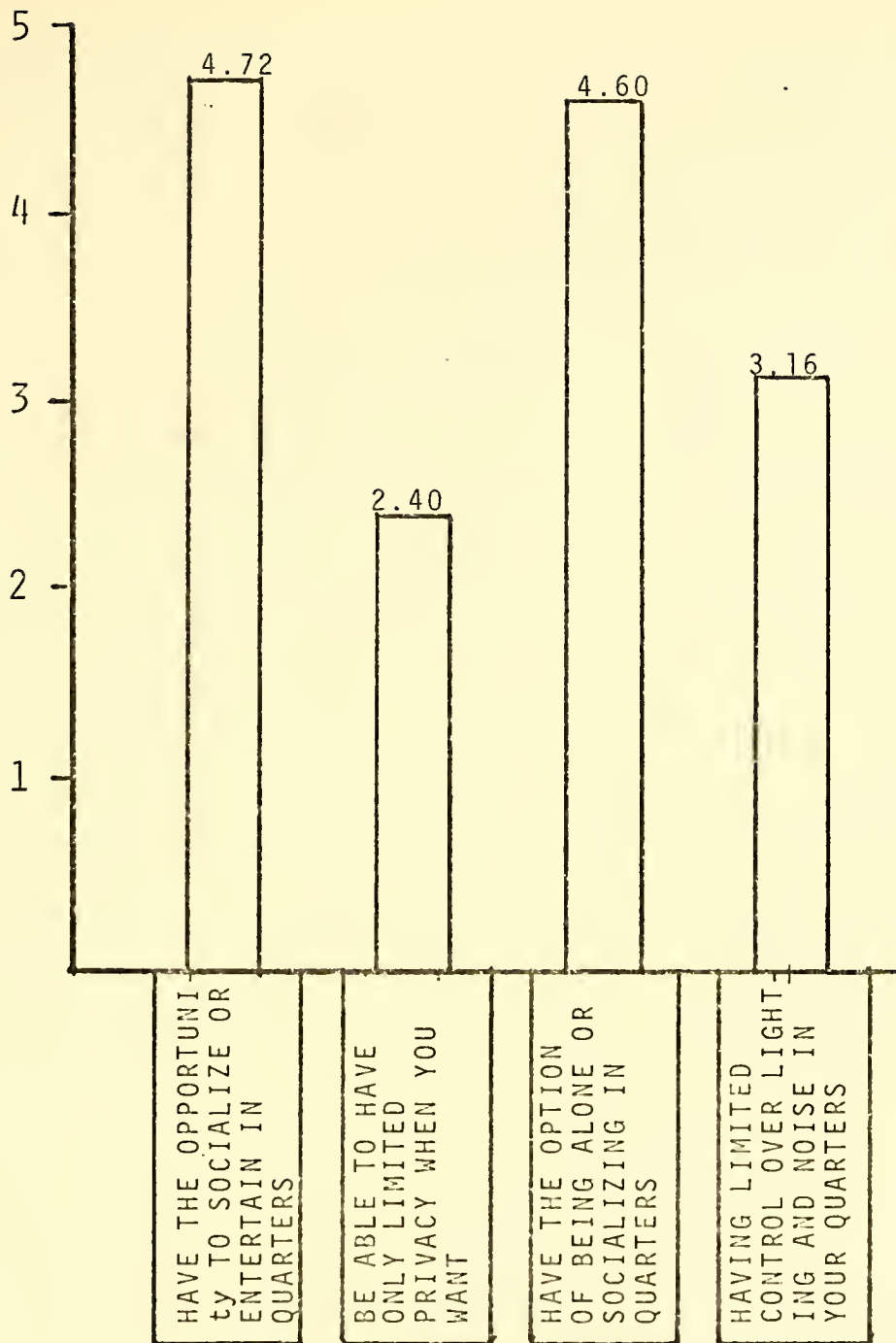


FIGURE 4: Reaction to Questions Posed in the Areas of Personal/Individual Privacy by On-Base E-5 and E-6 Males.

that the word "limited" was confusing to the population, as 28% found this option highly undesirable and 36% found it highly desirable. In an overall ranking of six areas of sociological concern, the percentage of personnel ranking an area as most important is shown in Table XXI.

Socialize or entertain in quarters	28%
Having limited privacy	8%
Option to be alone	16%
Noise and light control	16%

Table XXI

On-Base Male E-5 and E-6 Rankings of Sociological Areas

c. Safety and Security

Safety/Security was ranked as the second most important area of concern to the on-base personnel. In this area it is important to note that 15 of the 25 personnel wrote comments in the questionnaire to point out specific causes of their dissatisfaction. The most frequent comments were:

- (1) Locks on rooms are easy to break open
- (2) Lockers can not be adequately locked
- (3) Master keys are not adequately controlled
- (4) Water pump fire extinguishers are not considered

adequate

- (5) Old barracks considered to be a fire hazard.

A factor contributing to the need for adequate security was the amount of personal belongings possessed by the individuals. Responses showed that the individuals owned a substantial amount of

belongings which would be difficult to secure if the room could not be adequately locked. The items and the percentage of the sample are shown in Table XXII. When asked whether they thought there was adequate security for personal possessions in their quarters, 56% of the sample responded in the negative.

T.V. Set	64%
Record Player	36%
Tape Recorder	44%
Speakers	40%
Sports Equipment	48%

Table XXII

On-Base Male E-5 and E-6 Personal Possessions

The desire for safety and security could possibly be a contributory reason for the 56% of the sample stating that they would prefer to live off-base.

In the area of safety, 56% felt that there were adequate safety precautions in their quarters, 28% did not think so, and 16% did not respond to the question.

d. Furniture

Furniture available in quarters was ranked as the third most important area to the on-base personnel. This area had the highest satisfaction index among the on-base sample and the only satisfaction index which exceeded 3.0. In addition to ranking the area and indicating their satisfaction with it, the sample was asked to indicate their preference for selected items of furniture (Appendix B, page 120).

Responses which showed a consensus of either high desirability or desirability by a majority of the on-base personnel are in Table XXIII.

Item	Highly Desirable	Desirable
Desk	64%	24%
Chair	48%	40%
End table	16%	52%
Chest of Drawers	60%	20%
Wall shelves	44%	36%
Sofa	36%	36%
Refrigerator	76%	24%
Hot plate	56%	20%
Wet bar	48%	20%

Table XXIII

On-Base Male E-5 and E-6 Furniture Preferences

Responses to the type of bed the individuals would prefer were:

(1) Bunk bed	8%
(2) Single bed	40%
(3) Hide-a-bed (sofa)	20%
(4) Hollywood bed	20%
(5) Fold-out (wall)	12%

When asked about the desirability of having to maintain uniformity of furniture placement in quarters, (Appendix B, page 128) 72% of the on-base personnel responded that this would be undesirable or highly undesirable. Being able to use only issued furniture in quarters instead of using their own, was also found to be undesirable or highly undesirable by 80% of the respondents.

e. Regulations and Policies

Regulations/Policies was ranked fourth in importance to the on-base E-5 and E-6 personnel and their satisfaction index was

2.64. Since this is a far reaching and important area, there were several related questions which were asked of the population. Questions will be addressed separately as they appeared in the questionnaire.

The respondents were asked to state their preference to the sex and grade of neighbors in their living facility. Ninety-two percent of the sample population wanted neighbors of both sexes, whereas, 60% wanted neighbors of approximately their own pay grade.

In the sociological concerns sections of the questionnaire (Appendix B, pages 126-127) there are six statements, three of which are related to regulations and policies. Personnel were asked to rate the statements as to desirability. The three applicable statements and the responses to them are:

(1) Being able to come and go from your quarters during non-duty hours as you please.

Highly desirable	96%
Desirable	4%

(2) Having the opportunity to socialize or entertain in quarters.

Highly desirable	72%
Desirable	28%

(3) Having the option of being alone or socializing in quarters.

Highly desirable	68%
Desirable	28%
Undesirable	4%

In the second part of the sociological concerns section (Appendix B, page 128), there are another six statements which are

related to regulations and policies. Again, the individuals were asked to rate each of these statements as to desirability. The statements, and rating are as follows.

(1) Being limited to using installed storage facilities.

Highly undesirable	24%
Undesirable	32%
Indifferent	20%
Desirable	16%
Highly desirable	8%

(2) Having to maintain uniformity of furniture placement in the living facility.

Highly undesirable	32%
Undesirable	40%
Indifferent	16%
Desirable	8%
Highly desirable	4%

(3) Being required to paint the quarters if a change of color is desired.

Highly Undesirable	12%
Indifferent	16%
Desirable	56%
Highly Desirable	16%

(4) Being allowed to build shelves or bookcases in quarters.

No response	4%
Highly Undesirable	8%
Undesirable	4%
Indifferent	8%
Desirable	44%
Highly Desirable	32%

(5) Being able to decorate quarters.

Highly Undesirable	4%
Indifferent	8%
Desirable	40%
Highly desirable	48%

(6) Being required to use only issued furniture in quarters.

Highly undesirable	40%
Undesirable	40%
Indifferent	8%
Desirable	8%
Highly desirable	4%

f. Personal Storage Space

Availability of storage space was ranked as the fifth most important category to the E-5's and E-6's living on-base. The mean satisfaction level for the group in this area was 2.88 and the responses were:

Very Dissatisfied	16%
Dissatisfied	36%
Indifférent	8%
Satisfied	24%
Very Satisfied	16%

Forty percent of the group indicated that bookcases were highly desirable or desirable, and 60% indicated that wall shelves were also desirable or highly desirable. Eighty percent of this category also indicated that a chest of drawers for storage of personal articles was at least desirable. Additionally, 84% responded that being able to build bookcases or shelves was also desirable or above.

5. Additional Information Pertaining to On-Base E-5 and E-6 Personnel.

a. General

Other preferences recorded from the E-5 and E-6 category, but not in areas ranked as one of the first five areas of importance to them, will be adressed in this section.

b. Fixtures

The desirability of fixtures which the group was offered in their quarters is shown in Table XXIV.

Item	Highly Desirable	Desirable
Telephone	80%	4%
Intercom	24%	28%
Lavatory in room	52%	28%
Movable Partitions	28%	16%

Table XXIV

On-Base Male E-5 and E-6 Fixture Preferences

c. Window Coverings and Bath Types

Given the choice of window coverings and type of bath desired the individuals responded as follows:

Window Coverings

Venetian Blinds	4%
Curtains Only	32%
Shades-Curtains	36%
Shades-Blinds	28%

Bath Type

Combination (tub and shower)	32%
Shower only	68%
Tub only	0%

d. Messing Facilities

Personal preferences for the preparation and location of meals are as follows:

Meal	Prepared by Self (Own Room)	Prepared by Others	
		(Small Mess Hall)	(Large Mess Hall)
Breakfast	44%	48%	0%
Brunch	40%	48%	4%
Lunch	28%	56%	8%
Evening Meal	40%	40%	12%

(omissions causing row totals not to be 100% are due to those who did not respond to the question).

e. Quarters Location

Preference for location of quarters is shown in Table XXV.

Off-base in local community	48%
On-base near base facilities	16%
Off-base near gate	8%
On-base near gate	8%
On-base near work	20%

Table XXV

On-Base Male E-5 and E-6 Quarters Location Preference

f. Maintenance (Self-help)

Personal opinions expressed in the areas of responsibility towards damage, upkeep, and self-help (Appendix B, pages 129-130) were:

(1) Should an individual be held responsible for intentional damage to quarters.

Yes: 96%

No: 4%

(2) Participation in a self-help program

No participation	8%
Participate in personal area only	36%
Fully participate	56%

(3) Degree of upkeep responsibility

Do a fair share	32%
Assigned area only	20%
No responsibility	48%

g. Leisure activities

The five most frequently listed leisure activities in order of preference were:

- (1) T.V. watching
- (2) Social activities
- (3) Pool/Billiards
- (4) Swimming
- (5) Reading

h. Facilities

The five facilities listed as most desirable by the E-5 and E-6 male personnel, in order of preference were:

- (1) T.V. Room
- (2) Swimming pool
- (3) Laundry facility
- (4) Bowling alley
- (5) Sauna bath

6. Summary of E-5 and E-6 Male Personnel.

The degree of satisfaction and the order of importance of the five most important categories selected by the E-5 and E-6 male personnel are listed below. The responses are divided into two groups, on-base and off-base personnel.

For the on-base group the following five categories were indicated as most important by the 25 respondents:

Category	Satisfaction Level
Personal/Individual Privacy	2.84
Safety/Security	2.64
Furniture	3.16
Regulations/Policies	2.64
Personal Storage Space	2.88

Those categories selected by the off-base group (26 respondents)

were:

Category	Satisfaction Level
Personal/Individual Privacy	3.04
Regulations/Policies	3.19
Safety/Security	2.92
Personal Storage Space	2.96
Messing Facilities	3.35

A comparison of the two listings contains four common categories which indicate the following:

- a. Common items between both groups are those of major concern to the E-5 and E-6 male population.
- b. Responses of off-base personnel show an increase in satisfaction levels, and in the area of Personal/Individual Privacy and Regulations/Policies the increase is above the critical (3.0) level.
- c. Even though off-base responses show an increase in satisfaction levels, they do not appear to indicate a major improvement. This implies that improvement in on-base conditions associated with these categories might result in satisfaction levels above those expected for off-base personnel.

In those five areas indicated by the on-base personnel was being of major importance, four are below the critical (3.0) satisfaction level. Specific items for improvement as supported by an analysis of the remaining portions of the questionnaire are as follows:

a. Personal/Individual Privacy

- (1) Have the option of being alone or socializing when one desires.
- (2) Have some control over lighting and noise in personal living spaces.

(3) Have the ability to entertain and receive guests in quarters.

b. Safety/Security

(1) Effect timely repairs on building and associated equipment.

(2) Provide adequate fire escapes and fire fighting equipment.

(3) Provide adequate in-room lockable storage space for personally owned items.

(4) Install tamper-proof locks on rooms and establish adequate control over master keys.

c. Regulations/Policies

The Regulations and Policies category overlaps many of the other areas, and improvement in this area should have a positive effect on the improvement of levels of satisfaction in other areas. For example, many of those items listed under Safety/Security are controlled by regulations and policies. Some items not specifically stated previously are:

(1) Relaxation of regulations restricting individuals from decorating, painting, or otherwise personalizing living quarters.

(2) Allow for the use of personally owned items of furniture and room accessories (rugs, pictures, posters, etc.)

(3) Relax restrictions on the choice of roommates; enhance the ability to socialize or entertain in quarters; and allow for the integration of members of both sexes and all pay grades into the same housing facility.

d. Personal Storage Space

The substantial increase, during the past few years, in personally owned, highly pilferable items requires a major re-evaluation of personal storage space available to individual occupants. Such a re-evaluation must include external storage requirements for items such as automobiles, motorcycles, boats, and bicycles, as well as internal room requirements.

D. 0-1 THROUGH 0-3 MALE PERSONNEL

1. Profile Data

		On-Base	Off-Base
<u>Station</u>	North Island	0	15
	Lemoore	6	5
	Moffett Field	0	9
	NPS	<u>8</u>	<u>2</u>
	Total	14	31
<u>Age</u>	Minimum	22 yrs.	22 yrs.
	Maximum	33 yrs.	31 yrs.
	Mean	26.8 yrs.	26.1 yrs.
<u>Education</u>	High School	0	0
	Trade School	0	0
	Less than 2 yrs. College	0	0
	More than 2 yrs. College	0	0
	College Graduate	14 (100%)	31 (100%)
<u>Rate</u>	0-1	4 (28.6%)	3 (9.6%)
	0-2	3 (21.4%)	14 (45.2%)
	0-3	7 (50%)	14 (45.2%)
<u>Time in Service</u>	Minimum	1 yr.	2 yrs.
	Maximum	16 yrs.	7 yrs.
	Mean	6.4 yrs.	4.1 yrs.
<u>Time in BOQ</u>	Minimum	1 yr.	0 yr.
	Maximum	5 yrs.	4 yrs.
	Mean	2 yrs.	1.8 yrs.
<u>Career Intentions</u>	Leave the Service	1 (7.1%)	9 (29%)
	Remain in the Service	7 (50%)	8 (25.8%)
	Undecided	6 (42.9%)	13 (41.9%)

2. Comparison of Preference Rankings Between On-Base and Off-Base 0-1 Through 0-3 Male Personnel.

A comparison of the five highest preferential categories for the on-base 0-1 through 0-3 group (Table XXVI) and the 0-1 through 0-3 off-base group (Table XXVII) shows a marked contrast to previous group rankings in that all but two of the means are above the 3.0 (or indifferent) level. These two exceptions are Regulations/Policies (a mean of 2.85) for the on-base personnel and Personal/Individual Privacy (a mean of 2.97) for the off-base individuals.

	Very Dis- satisfied	Dissat- isfied	Indif- ferent	Satis- fied	Very Sat- isfied
Personal Privacy	7.1%	14.3%	14.3%	57.2%	7.1%
Regulations/Policies	7.1%	42.9%	7.1%	42.9%	0%
Furniture	0%	21.4%	42.9%	35.7%	0%
Messing Facilities	7.1%	21.4%	14.3%	42.9%	14.3%
Safety/Security	0%	28.6%	21.4%	42.9%	7.1%

Table XXVI

Distribution of Responses for Off-Base 0-1 Through 0-3 Male Personnel

	Very Dis- satisfied	Dissat- isfied	Indif- ferent	Satis- fied	Very Sat- isfied
Personal Privacy	23.3%	26.7%	6.7%	16.6%	26.7%
Furniture	6.7%	10%	26.7%	40%	16.6%
Messing Facilities	10%	6.7%	30%	40%	13.3%
Safety/Security	0%	10%	23.3%	50%	16.7%
Fixtures	13.3%	16.7%	13.3%	40%	16.7%

Table XXVII

Distribution of Responses for Off-Base 0-1 Through 0-3 Male Personnel

The two ranking lists contain four common items (Table XXVIII). They are Personal/Individual Privacy (ranked number one by both groups), Furniture (third for on-base, second for off-base), Messing Facilities (fourth for on-base, third for off-base group) and Safety/Security (fifth for on-base personnel, fourth for those off-base).

On-Base	Off-Base
1. Personal/Individual Privacy	1. Personal/Individual Privacy
2. Regulations/Policies	2. Furniture
3. Furniture	3. Messing Facilities
4. Messing Facilities	4. Safety/Security
5. Safety/Security	5. Fixtures

Table XXVIII

Preferential Rankings of 0-1 Through 0-3 Male Personnel

Tables XXIX and XXX give a detailed breakdown of the responses and statistical data obtained from the on-base and off-base officers interviewed.

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	14	3.43	1.19	1.09
Regulations/Policies	14	2.85	1.21	1.1
Furniture	14	3.14	.59	.77
Messing Facilities	14	3.35	1.48	1.22
Safety/Security	14	3.28	1.14	1.07

Table XXIX

Mean Satisfaction Statistics of Critical Areas

for On-Base 0-1 Through 0-3 Male Personnel

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	30	2.97	1.71	1.31
Furniture	30	3.50	1.01	1.005
Messing Facilities	30	3.47	1.29	1.14
Safety/Security	30	3.73	.75	.87
Fixtures	30	3.30	1.73	1.31

Table XXX

Mean Satisfaction Statistics of Critical Areas
for Off-Base 0-1 Through 0-3 Male Personnel

As with previous groups analyzed the common categories listed by both groups indicate those of major importance to the junior officers as a whole.

3. Comparison of Satisfaction Levels Between On-Base and Off-Base 0-1 Through 0-3 Male Personnel.

Selecting the five top preferential categories for the on-base personnel and comparing to those same categories for the off-base group, all mean satisfaction levels are higher for the off-base group with the notable exception of Personal/Individual Privacy. Here the on-base group had a mean of 3.43 as compared to 2.97 for those living off-base. Reasons for this particular deviation can only be speculative. A possible explanation may lie in the general policy of extending Basic Allowance for Quarters (BAQ) more readily, in the past few years, to officers, allowing EOQ occupants remaining on-base to realize a one-man/one-room concept. Figure 5 and Table XXXI detail the statistics of the comparison. Again, as with other groups, off-base personnel indicated higher satisfaction levels.

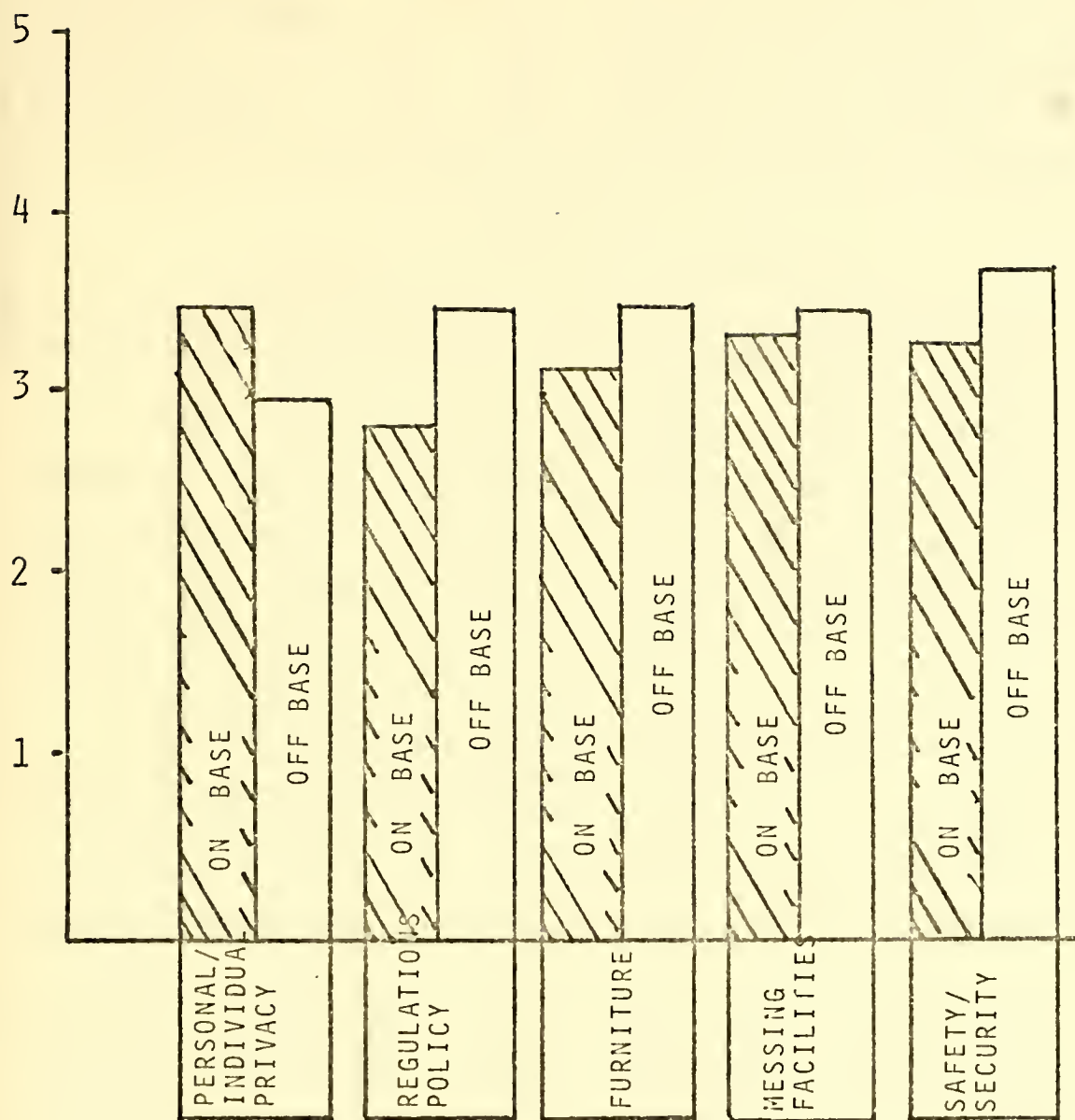


FIGURE 5: Comparison of Satisfaction Levels for On-Base and Off-Base 0-1 Through 0-3 Male Personnel.

	#In Sample		Mean		Variance		Std. Dev.	
	On	Off	On	Off	On	Off	On	Off
Personal Privacy	14	30	3.43	2.97	1.19	1.71	1.09	1.31
Regulations/Policies	14	30	2.85	3.43	1.21	1.08	1.1	1.04
Furniture	14	30	3.14	3.50	.59	1.01	1.1	1.005
Messing Facilities	14	30	3.35	3.47	1.48	1.29	1.22	1.14
Safety/Security	14	30	3.28	3.73	1.14	.75	1.07	.87

Table XXXI

Comparison of Critical Area Statistics for
On-Base and Off-Base 0-1 Through 0-3 Male Personnel

The officer group also displays a notably higher index of satisfaction over the enlisted groups. These results are not unexpected when considering that the officer group is generally older, better educated, less restricted by regulations, occupy less crowded quarters and enjoy a substantially higher income.

4. Detailed Analysis of Questionnaire Data For Critical Areas For On-Base 0-1 Through 0-3 Male Personnel.

The only critical area for the on-base 0-1 through 0-3 personnel was that of Regulations/Policies (a mean of 2.85).

An analysis of questionnaire responses in the area of Regulations/Policies shows that freedom to come and go from quarters during non-duty hours was considered highly desirable by 92.9% of the respondents. Additionally being allowed to entertain in quarters was highly desirable for 100% of the sample group.

Being limited to the use of only installed storage facilities was listed as highly undesirable or undesirable by 57.1% while only 7.1% listed this as desirable. Regulations requiring uniformity in

furniture placement in living spaces was deemed highly undesirable or undesirable by 71.4%, while being allowed to decorate and install personal fixtures was listed as highly desirable or desirable by 92.9% of the group. Additionally 71.5% felt that it was highly desirable or desirable to be permitted to install self-owned storage facilities, such as bookcases and wall shelves, in their personal living spaces.

5. Additional Information Pertaining to On-Base 0-1 Through 0-3 Male Personnel.

The remaining items in the questionnaire dealing with fixture preference, furniture desires, storage requirements, building occupancy and location, messing preferences, leisure and recreational activities and desirable facilities are detailed in this section with their associated responses.

a. Fixtures/Furniture

The preferences of the 0-1 through 0-3 on-base group are listed in Table XXXII. Only those items indicated by at least 50% of the personnel responding as highly desirable or desirable are listed.

b. Bed/Bath type

For bed preferences, 49.9% desired a single-type bed, 21.4% a hide-a-bed, while Hollywood and fold-out beds (hidden in wall) were each desired by 14.3% of the group. For bath type 85.7% indicated a preference for the combination tub and shower with the remainder desiring a shower only.

Item	Highly Desirable	Desirable
Desk	78.5%	14.3%
Chair	57.2%	28.6%
Coffee table	14.3%	57.2%
End table	7.1%	57.1%
Chest of drawers	64.4%	35.6%
Bookcase	57.2%	42.8%
Wall shelves	42.8%	49.9%
Sofa	50%	35.7%
Refrigerator	85.7%	14.3%
Hot plate	42.8%	49.9%
Wet bar	28.5%	28.5%
Telephone in room	57.1%	28.6%
Lavatory in room	64.3%	28.6%

Table XXXII

On-Base Male 0-1 Through 0-3 Furniture and Fixture Preference

c. Window Coverings

Selection preferences for window coverings is listed below.

Blinds and Curtains	57.2%
Shades and Curtains	21.4%
Curtains only	21.4%

d. Personal Items Owned

Those item listed as personal possessions are noted in Table XXXIII along with the percentage of the sample group owning that item.

Item	Percent Owning Item
Car	100%
Motorcycle	21.4%
Bicycle	21.4%
Boat	0%
Television	42.9%
Record Player	92.9%
Tape Recorder	57.1%
Sports Equipment	85.7%
Record Collection	85.7%
Tape Collection	57.1%
Speaker Set	85.7%

Table XXXIII

On-Base Male 0-1 Through 0-3 Personal Possessions

e. Building Occupancy

As with other male groups the vast majority (92.9%) preferred to live in a building occupied by members of both sexes. As to pay grades, 50% desired neighbors of all pay grades, while 50% desired only neighbors of approximately the same pay grade. The preference for room location showed that 50% desired to live above the ground floor, 28.6% preferred the ground floor; 21.4% were indifferent to actual room location within the building.

f. Building Location

The desires for building location were indicated as follows.

On-base near facilities	50%
On-base near work	14.3%
On-base near gate	7.1%
Off-base in local community	28.6%

As can be noted 71.4% indicate some preference for on-base quarters.

g. Messing Preferences

The majority of the male officers responding indicated a preference for either preparing their own meals in their own room, or eating in a small dining room. Preferences are shown in Table XXXIV.

Prepared by Self (Own Room)		Prepared by Others (Small Mess Hall) (Large Mess Hall)	
Breakfast	64.3%	35.7%	0%
Brunch	35.7%	64.3%	0%
Lunch	50%	42.9%	7.1%
Evening Meal	14.3%	78.6%	7.1%

Table XXXIV

On-Base Male 0-1 Through 0-3 Messing Preferences

h. Leisure Activities

Those leisure activities most often listed by the 0-1 through 0-3 groups are listed below to gain some indication of those activities most desirable to the respondents.

- (1) T.V. viewing
- (2) Music (playing-listening)
- (3) Social activities
- (4) Reading
- (5) Pool/Billiards
- (6) Tennis
- (7) Movies

i. Facilities Preference

The design of any building must include those facilities needed by the inhabitants if satisfaction levels are to be raised or

maintained above a desirable level. For this group the below list indicates those facilities most desirable for the 0-1 through 0-3 officers.

- (1) Laundry facilities
- (2) T.V. room
- (3) Swimming pool
- (4) Sauna room
- (5) Reading room
- (6) Tennis court

6. Summary of 0-1 Through 0-3 Male Personnel.

From the ten categories listed in the questionnaire (Appendix B, page 118) the respondents were asked to first indicate their degree of satisfaction with each item and then to rank the ten items in their order of importance. The data from the 0-1 through 0-3 male group were then divided into two groups, on-base and off-base personnel, and the responses of these two groups were compared.

The officer group displayed a noticeably higher index of satisfaction as compared to the male enlisted groups. This higher degree of satisfaction was not unexpected since the officer group is generally older, better educated, less restricted by regulations, occupy less crowded quarters, and enjoy a substantially higher income than the other groups.

For the on-base officer groups the following five categories were indicated as most important by the 14 respondents in the group. Current satisfaction levels are also presented.

Category	Satisfaction Level
Personal/Individual Privacy	3.43
Regulations/Policies	2.85
Furniture	3.14
Messing Facilities	3.35
Safety/Security	3.28

Those categories selected as most important by the off-base officer group (30 respondents) were:

Category	Satisfaction Level
Personal/Individual Privacy	2.97
Furniture	3.50
Messing Facilities	3.47
Safety/Security	3.73
Fixtures	3.30

A comparison of the items contained in the above lists revealed the following:

a. Off-base personnel indicated higher satisfaction levels than on-base personnel with the notable exception of Personal/Individual Privacy. This may be explained by the increased BAQ available to the Junior officers allowing remaining on-base residents to realize a one-man/one-room concept.

b. Improvement in the area of Regulations/Policies, the only category indicated as critical by the on-base personnel, should also enhance satisfaction in the other categories of importance which are all above the 3.0 critical level, and thus increase the desirability of remaining in on-base quarters.

Specific areas where improvement in the category of Regulations/Policies may occur were obtained from the questionnaire responses of the officer personnel. These responses indicate a desire for the relaxation of restrictive regulations in the following areas:

(1) Ability to decorate or otherwise personally individualize living quarters.

(2) Receiving and entertaining guests in quarters.

(3) Use of personally owned items of furniture and room accessories.

E. E-2 THROUGH E-4 FEMALE PERSONNEL

1. Profile Data

		On-Base	Off-Base
<u>Station</u>	North Island	0	4
	Imperial Beach	0	2
	Lemoore	5	1
	NPS	<u>3</u>	<u>1</u>
	Total	8	8
<u>Age</u>	Minimum	19 yrs.	19 yrs.
	Maximum	26 yrs.	24 yrs.
	Mean	21.5 yrs	20.6 yrs.
<u>Education</u>	High School	3 (37.5%)	6 (75%)
	Trade School	0	1 (12.5%)
	Less than 2 yrs. College	1 (12.5%)	1 (12.5%)
	More than 2 yrs. College	1 (12.5%)	0
	College Graduate	3 (37.5%)	0
<u>Rate</u>	E-2	1	2
	E-3	3	5
	E-4	4	1
<u>Time in Service</u>	Minimum	1 yr.	1 yr.
	Maximum	3 yrs.	3 yrs.
	Mean	1.6 yrs.	1.9 yrs.
<u>Time in BEQ</u>	Minimum	1 yr.	1 yr.
	Maximum	3 yrs.	3 yrs.
	Mean	1.25 yrs.	1.4 yrs.
<u>Career Intentions</u>	Leave the Service	4 (50%)	6 (75%)
	Remain in Service	2 (25%)	0
	Undecided	2 (25%)	2 (25%)

2. Comparison of Preference Rankings Between On-Base and Off-Base E-2 Through E-4 Female Personnel.

The satisfaction indices for the five highest preference items were determined for the on-base group and compared to the five highest preference items for the off-base personnel. Table XXXV shows the preferential rankings for both groups.

On-Base	Off-Base
1. Safety/Security	1. Personal/Individual Privacy
2. Personal/Individual Privacy	2. Safety/Security
3. Personal Storage Space	3. Building Location
4. Regulations/Policies	4. Personal Storage Space
5. Base Transportation	5. Building Maintenance

Table XXXV

Preferential Rankings of E-2 Through E-4 Female Personnel

Though not ranked in the same order by both groups the categories of Safety/Security, Personal/Individual Privacy and Personal Storage Space appear in both preference orderings attesting to the importance of these categories to the female population. Tables XXXVI and XXXVII detail the statistical data for the satisfaction indices of the categories for both groups.

In those categories common to both groups (Safety/Security, Personal/Individual Privacy and Personal Storage Space) the satisfaction indices are higher in all cases for the off-base group indicating a general trend toward increasing satisfaction levels for individuals living off-base. However, only in the area of Safety/Security does the index rise above the critical 3.0 level.

	Number of Respondents	Mean	Variance	Std. Dev.
Safety/Security	7	2.71	1.89	1.37
Personal Privacy	8	1.87	.91	.95
Personal Storage Space	8	1.63	1.12	1.06
Regulations/Policies	8	2.50	2.57	1.60
Base Transportation	8	2.14	1.63	1.28

Table XXXVI

Mean Satisfaction Statistics of Critical Areas

For On-Base E-2 Through E-4 Female Personnel

	Number of Respondents	Mean	Variance	Std. Dev.
Personal Privacy	8	2.25	1.64	1.28
Safety/Security	8	3.25	1.07	1.03
Building Location	8	3.75	.22	.47
Personal Storage Space	8	2.63	.84	.91
Building Maintenance	8	3.13	1.27	1.13

Table XXXVII

Mean Satisfaction Statistics of Critical Areas

For Off-Base E-2 Through E-4 Female Personnel

By comparison, the mean satisfaction index for the on-base personnel in the category of Safety/Security was 2.71 as compared to 3.25 for the off-base group. For that of Personal/Individual Privacy the on-base group had 1.87 as compared to 2.25 for those off-base. For Personal Storage Space the mean satisfaction index was 1.63 while the off-base individuals indicated 2.63

The distribution of the responses is indicated in Tables XXXVIII and XXXIX. The category of Personal/Individual Privacy for

the on-base group E-2 through E-4 females had the smallest variance (.91) while that of Safety/Security had the largest (1.37). The smaller the variance the more closely grouped about the mean are the responses of the individuals. In dealing with a small sample size, as in this case (8 on-base individuals), those categories with a relatively small variance indicated a more uniform feeling in the attitudes of the respondents. Accordingly, satisfaction levels for the categories of Personal/Individual Privacy and Personal Storage Space for on-base personnel and all those categories except Personal/Individual Privacy for the off-base personnel are considered to be realistically representative of the population as a whole. Obviously a larger sample size is needed in this general area of female enlisted personnel in order to approximate more nearly the population satisfaction levels.

	Very Dis- satisfied	Dissat- isfied	Indif- ferent	Satis- isfied	Very Sat- isfied
Safety/Security	25%	12.5%	12.5%	37.5%	0%
Personal Privacy	62.5%	12.5%	0%	25%	0%
Personal Storage Space	62.5%	25%	0%	12.5%	0%
Regulations/Policies	50%	0%	0%	50%	0%
Base Transportation	62.5%	0%	25%	12.5%	0%

Table XXXVIII

Distribution of Responses for Critical Areas
of On-Base E-2 Through E-4 Female Personnel

	Very Dis- satisfied	Dissat- isfied	Indif- ferent	Satis- fied	Very Sat- isfied
Personal Privacy	37.5%	25%	12.5%	25%	0%
Safety/Security	0%	37.5%	62.5%	0%	0%
Building Location	0%	0%	25%	75%	0%
Personal Storage Space	0%	62.5%	12.5%	25%	0%
Building Maintenance	12.5%	12.5%	25%	50%	0%

Table XXXIX

Distribution of Responses for Critical Areas of
Off-Base E-2 Through E-4 Female Personnel

3. Comparison of Satisfaction Levels Between Female E-2 Through E-4 On-Base and Off-Base Personnel.

In an effort to gauge the increase in satisfaction levels when female personnel move off-base, the five preferential categories selected by the on-base group as most important were compared with those same five categories for the off-base personnel.

In all categories the satisfaction levels for the off-base personnel are higher than for those on-base. The largest differences in mean satisfaction levels occur in Personal Storage Space and the Availability of Base Transportation. Figure 6 and Table XL detail the statistical data of the comparisons.

The data for determining the satisfaction level for the on-base group in the Availability of Base Transportation is heavily biased by the responses of the personnel stationed at NAS Lemoore and the Naval Postgraduate School. In both of these localities the barracks areas are located at a substantial distance from the assigned work

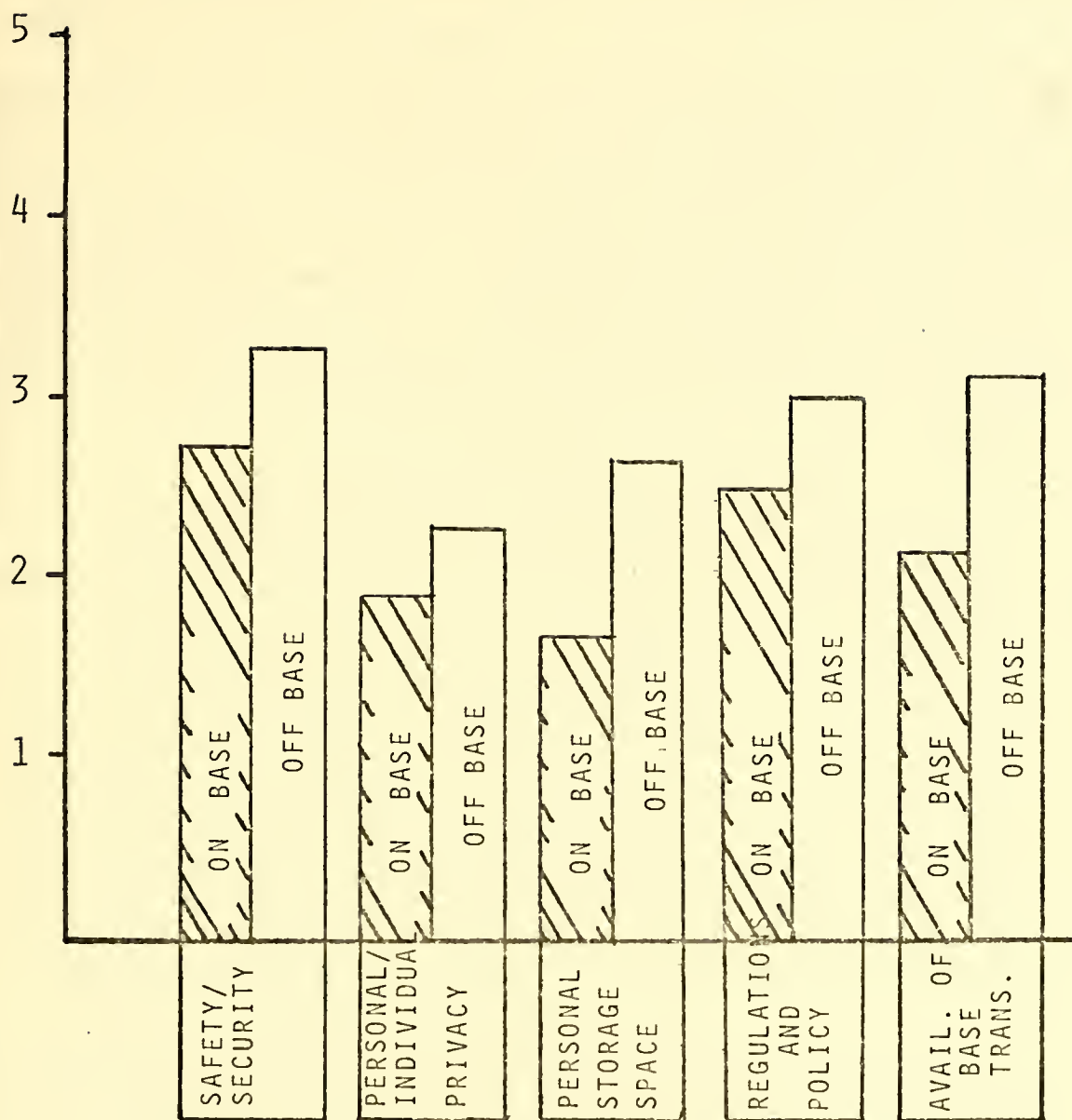


FIGURE 6: Comparison of Astisfaction Levels for On-Base and Off-Base E-2 Through E-4 Female Personnel.

spaces with little or no regular transportation services provided. A low satisfaction level was anticipated in the area of transportation availability due to this situation.

	#In Sample		Mean		Variance		Std. Dev.	
	On	Off	On	Off	On	Off	On	Off
Safety Security	7	8	2.71	3.25	1.89	1.07	1.37	1.03
Personal Privacy	8	8	1.87	2.25	.91	1.64	.95	1.28
Personal Storage Space	8	8	1.63	2.63	1.12	.84	1.06	.92
Regulations/Policies	8	8	2.50	3.00	2.57	.86	1.60	.93
Base Transportation	8	8	2.14	3.13	1.63	1.27	1.28	1.13

Table XL

Comparison of Critical Area Statistics For

On-Base and Off-Base E-2 Through E-4 Female Personnel

The category of Personal Storage Space is the only category with a relatively small variance (1.12 for the on-base group and .91 for those off-base) indicating some uniformity in the satisfaction level for both groups. Personal Storage Space was frequently mentioned by the on-base female group during the discussion period as an area of general dissatisfaction.

4. Detailed Analysis of Questionnaire Data for Critical Areas for On-Base Female E-2 Through E-4 Personnel.

a. Safety/Security

Safety/Security has a somewhat different meaning to females as compared to their male counterparts. Generally the male population looked upon this item as pertaining to the safety and security of personal possessions. For the females it leaned more toward personal

safety and a sense of security. Six out of the eight women felt that their present quarters on-base did not have adequate security precautions. Barracks areas had been partitioned off to form cubicles, some of which had no doors or closeable partition to separate the "room" from the passageway. In most cases the partitions between rooms did not go entirely to the ceiling allowing easy entrance to outsiders. Provisions for securing personal items such as radios, television sets, jewelry and the like were also notably absent.

Comments made during the discussion session following administration of the questionnaire indicated concern over the lack of or inadequacy in safety measures taken in the living quarters. Absence or limited numbers of fire extinguishers and fire-escapes, especially in old wooden barracks, was a particular concern. Failure to make timely repairs of damaged or broken fixtures presented an expressed hazard as well. Items of particular note were broken windows and inoperable bathroom fixtures. Though these items were mentioned in detail as well by the males sampled, they were placed under the Building Maintenance category by the male individuals. Psychologically, for the females, these particular items, left in a state of disrepair, constituted more of a threat to individual safety and security (or a feeling of their well-being) than did simple building and facility repair.

b. Personal/Individual Privacy.

The preferences expressed by the female E-2's to E-4's in the area of Personal/Individual Privacy were noted.

From the sample population 87.5% preferred to live on-base as opposed to 12.5% preferring the off-base location. Preferences as to general location on-base were as follows:

Individuals	
Near work	2
Near base facilities	3
Near off-base access	2
Totals	<u>7</u> *

*One respondent indicated no preference

Of the eight females sampled, 6 (75%) preferred to live above the ground floor as opposed to on the ground floor.

Several general questions pertaining to privacy were posed and the desirability index was applied to ascertain the female reaction. Figure 7 details these results.

The general feelings of this particular group (female enlisted) are strikingly similar to that of previous groups analyzed. The trend is toward a preferential choice in control over those aspects that affect privacy. Simply, it does not appear that more privacy is wanted but more freedom in having it when desired.

c. Personal Storage Space

Personal Storage Space is an often overlooked item in the design of living spaces for large numbers of personnel. Particularly today, as pay scales are increasing steadily, the average enlisted person is able to acquire more personal possessions than his or her counterpart of five or ten years ago. As these possessions are acquired some type of secure storage space must be provided if any degree of satisfaction is to be reached and maintained.

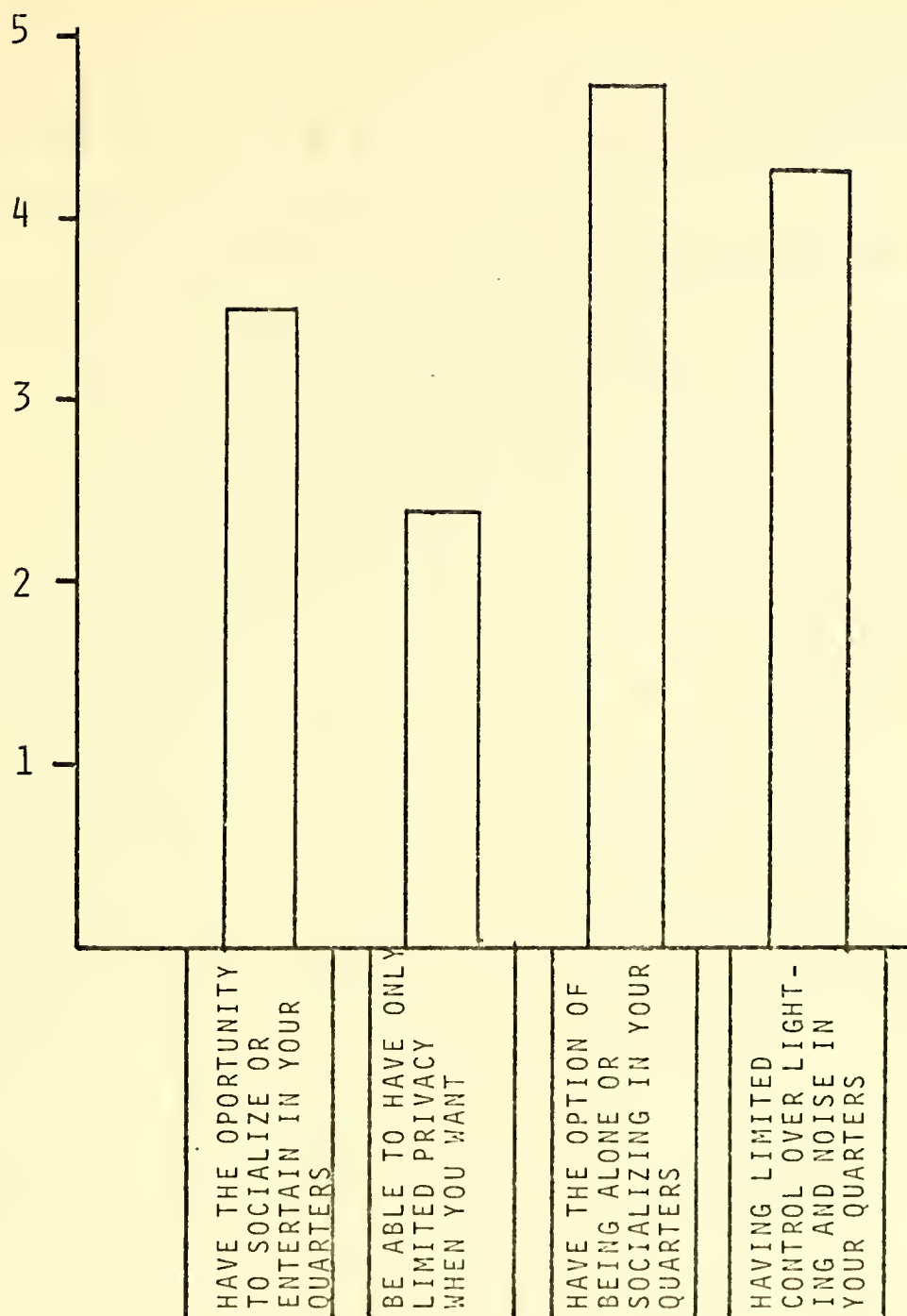


FIGURE 7: Reactions to Questions Posed in the Areas of Personal/Individual Privacy to On-Base E-2 Through E-4 Female Personnel.

In an effort to identify the various types and amounts of personal possessions owned by today's female enlisted personnel living on-base the following data was compiled.

Four out of eight women living on-base own an automobile. Two out of the eight living on-base owned bicycles.

Additionally, two out of the eight owned a television set, six owned record players and record collections, four had tape recorders and tape collections while four owned various assortments of sporting equipment. All of those in this sample complained that storage facilities in their living quarters were inadequate and provided poor security against theft and pilferage.

d. Regulations and Policies

Under the item of Regulations and Policies the general consensus of the women sampled was that regulations pertaining to personal and individual privacy were the most restrictive. They expressed that they had had more freedom to come and go and select times to be alone when they were in civilian life.

The ability to entertain in quarters or selectively enjoy some measure of complete privacy was considered very desirable by the majority of the women sampled.

It is interesting to note that unlike their male counterparts the women strongly preferred (seven out of eight) to live in quarters occupied only by members of their own sex.

Seven of the eight showed a marked preference (highly desirable or desirable) for being allowed to decorate or furnish their

personal living quarters. Additionally, six of the eight indicated that they would fully participate in self-help programs designed to improve living spaces.

All of the eight felt that individuals should be held responsible for damage done by that particular individual to living spaces, facilities and associated property.

e. Availability of Base Transportation

Of all groups sampled, the enlisted women living on-base were the only ones selecting this area in their preference ranking. Considering the biased nature of the data, as mentioned previously in Section E.3., it can not be determined if this particular category is representative of the population and as such will not be analyzed in depth.

5. Additional Information Pertaining to On-Base Female E-2 Through E-4 Personnel.

To determine other preferences and desires, the remainder of the questionnaire dealt with fixtures, furniture, personally owned items, building occupancy, building location, policy and regulations, messing preferences, leisure and recreational activities and facilities.

a. Fixtures/Furniture

Table XLI details the responses of the female on-base group in the area of fixtures and furniture. Not all items listed in the questionnaire are contained in the table. Only those items where 50% or more of the females in the group responded with desirable or highly desirable indications are listed.

Item	Highly Desirable	Desirable
Desk (with chair)	50%	12.5%
Chair (lounge)	25%	25%
Chest of drawers	62.5%	12%
Bookcase	0%	50%
Wall shelves	25%	25%
Refrigerator	37.5%	25%
Hot plate	25%	50%
Wet bar	25%	25%
Telephone in room	37.5%	12.5%
Movable partitions	0%	50%
Lavatory in room	62.5%	12.5%

Table XLI

On-Base Female E-2 Through E-4 Furniture/Fixture Preferences

b. Bed Type/Bath Type

For bed types the sample of eight females indicated that 62.5% preferred a single type bed and the remainder (37.5%) preferred a hide-a-bed type. For bath facility 75% indicated a preference for a combination tub and shower while 25% preferred a shower alone.

c. Window Coverings

Five out of eight women (37.5%) preferred curtains only for window coverings while two out of the eight (25%) indicated a preference for a shade a curtain combination. Additionally, 25% desired a blinds and curtain combination and one out of the eight desired blinds only.

d. Personal Items Owned

Table XLII lists personally owned items and the percent of the sample owning the item.

Item	Percent Owning Item
Car	50%
Bicycle	25%
Television	25%
Record player	25%
Tape recorder	50%
Sports equipment	50%
Record collection	75%
Tape collection	37.5%
Speaker set	62.5%

Table XLII

On-Base Female E-2 Through E-4 Personal Possessions

e. Building Occupancy

It is interesting to note that the majority (seven out of eight) of the females preferred to live in a building occupied only by members of their own sex whereas the majority of the male group preferred a mixed occupancy. In addition, 100% of the females sampled indicated a preference to have the building occupied by members of all pay grades. Six out of the eight (75%) desired the room location to be above the ground floor as opposed to on the ground floor.

f. Building Location

The response to preference for building location was varied and is presented below:

On-base near facilities	37.5%
On-base near work	25.8%
On-base near off-base access	25%
Off-base near on-base access	12.5%

The majority (87.5%) indicated a preference for living on the base as opposed to an off-base location.

g. Regulations and Policies

This particular area was touched upon in the light of self-help programs to initiate improvement in existing enlisted quarters. Present policy generally prohibits painting or otherwise changing interior designs but indications are that given the opportunity most female enlisted personnel (75%) would fully participate in such a program. One out of the eight indicated a preference to work in her personal living space only, while one said she would decline to participate at all.

h. Messing Preference

The majority of the females in the sample favored having the ability to prepare their own meals in their own rooms. The responses are shown in Table XLIII.

	Prepared by Self (Own Room)	Prepared by Others (Small Mess Hall) (Large Mess Hall)	
Breakfast	75%	25%	0%
Brunch	100%	0%	0%
Lunch	50%	25%	25%
Evening Meal	62.5%	25%	12.5%

Table XLIII

On-Base Female E-2 Through E-4 Messing Preferences

i. Leisure Activities

The leisure activities most often indicated by the female enlisted group were:

- (1) Reading
- (2) Music (playing-listening)
- (3) Exercising
- (4) Studying
- (5) T.V. viewing
- (6) Swimming
- (7) Social activities
- (8) Tennis

j. Facilities Preference

As in the leisure activities above the following facilities preferences were indicated by the majority of the sample.

- (1) Laundry facilities
- (2) Sauna room
- (3) Visitor's lounge
- (4) Swimming pool
- (5) Tennis courts

6. Summary of the E-2 Through E-4 Female Personnel.

This group is unique in that it is the only female group analyzed in this study. It is also the smallest of the groups having only eight women in the on-base group and eight in the off-base group.

From responses to the questionnaire (Appendix B, pages 118 and 119) the five most important categories for the female groups determined are listed below with their associated satisfaction levels.

For the on-base E-2 through E-4 female group the five most important categories were:

Category	Satisfaction Level
1. Safety/Security	2.71
2. Personal/Individual Privacy	1.87
3. Personal Storage Space	1.63
4. Regulations/Policies	2.50
5. Base Transportation	2.14

The five categories listed for the off-base female group were:

Category	Satisfaction Level
1. Personal/Individual Privacy	2.25
2. Safety/Security	3.25
3. Building Location	3.75
4. Personal Storage Space	2.63
5. Building Maintenance	3.13

In a comparison of the two listings, three common items are found, those of Safety/Security, Personal/Individual Privacy, and Personal Storage Space. Since these items are listed by both groups the indication is that they are of major importance to the female E-2 through E-4 population in general. Analyzing these three categories with supportive data from the remaining areas of the questionnaire (Appendix B) bring out particular areas needing improvement if satisfaction levels are to be raised to or above those resulting from an off-base move.

a. Safety/Security

As with the male enlisted groups the female group cited specific examples of the lack of proper storage space to lock up or otherwise secure personal possessions. Many of the living spaces (barracks type buildings partitioned in cubicles) allotted to the on-base females were without doors to separate the "room" from the passageway.

Unlike the male enlisted groups, the female group specifically noted items of disrepair as affecting their sense of security, whereas the male enlisted groups placed such items under Building Maintenance. Psychologically these items appear to adversely affect the females "sense of well-being" which in turn creates a feeling of insecurity.

b. Personal/Individual Privacy

As mentioned above, the majority of the E-2 through E-4 females lived in barracks type building which had been partitioned off into cubicle areas. The walls of these cubicles, in most cases, did not reach the ceiling allowing almost unrestricted access to would-be intruders. The ability of an individual female to obtain any degree of privacy from her neighbors was, for all practical purposes, nonexistent. Thus, it is not unusual that this particular category ranked as one of the overall lowest in satisfaction levels for any group analyzed.

c. Personal Storage Space

This particular item appears in all of the enlisted categories both as an area of major importance as one with a low satisfaction index. Simply, in present day enlisted quarters there is inadequate (both in quantity and quality) storage space for personally owned items. The female population is no exception and additionally, as females, they have unique storage requirements. Besides the standard possessions of radios, televisions, record players, speakers, etc., the average enlisted female owns a hair dryer, hair curlers, an assortment of beauty cosmetics, jewelry, and many other related items. In planning and providing for the requirements of female occupants such differences must be considered if satisfaction levels are to be raised.

IV. SUMMARY

A summary of the findings for each personnel group has been presented at the end of each section in which the group was analyzed. While these summaries are considered to be important, it is also thought that a summary of overall results, in a manner that avoids being biased by the comparatively large E-2 through E-4 group, is necessary to provide a composite overview of the data collected and analyzed. Further, since similar studies have been conducted in user housing requirements, similarities between this analysis and previous analyses are also considered necessary in order that this paper may be as complete as possible. Figure 9 is a display of the satisfaction levels expressed by the various personnel groups in the categories ranked as being most important to them. An analysis of each category will be presented in the remainder of the summary.

ITEM	Male E-2/E-4 On Base	Male E-2/E-4 Off Base	Male E-5/E-6 On Base	Male E-5/E-6 Off Base	Male O-1/O-3 On Base	Male O-1/O-3 Off Base	Female E-2/E-4 On Base	Female E-2/E-4 Off Base
Furniture	2.68	2.92	3.16		3.14	3.50		
Fixtures						3.30		
Storage	2.63	2.73	2.88	2.96			1.65	2.63
Messing	2.64			3.35	3.35	3.47		
Safe/Security	2.71	2.76	2.64	2.92	3.28	3.73	2.71	3.25
Regulations/Policy		2.71	2.64	3.19	2.85		2.50	
Building Maintenance								3.13
Building Location								3.75
Transportation Avail.							2.14	
Privacy	2.09	2.48	2.84	3.04	3.43	2.97	1.87	2.25

FIGURE 8: Summary of Categories of Importance and Satisfaction Levels By Personnel Groupings.

A. FURNITURE

Of the eight personnel groups in the survey, five groups listed the category of furniture as being one of the most important categories to them. The satisfaction levels of the officer groups and of the on-base E-5 and E-6 personnel were higher than the critical level of 3.0. The lower satisfaction levels expressed by the male E-2 through E-4 groups indicate that this is an area where improvement is needed. A previous ONR study concluded that allowing an individual to personalize the environment creates feelings of permanence, stability and identification [14]. The preference for movable furnishings expressed by all groups supports the URBS conclusion that built-in furnishings and stereotyped architecture that do not permit student adornment present a rigidly consistent institutional quality that is resented. The URBS study further recommended that rooms should permit creative expression to remove some of the burden of conformity and malaise of frustration [10].

B. FIXTURES

Figure 8 shows that only one group, the off-base officers, ranked fixtures as an important category. Their satisfaction level of 3.30 indicates that this is probably not a critical area. While not ranked as an important area to the other groups, there was a high degree of desirability expressed by all personnel groups for certain fixtures to be available in their quarters. The foremost items were a telephone in the room, a combination shower and tub for the females, and a shower only for the males. Responses were somewhat mixed for window coverings, however, some type of window cover was desired by all personnel. There was little desire expressed for partitions in rooms by any of the groups and partitions were generally considered to be an undesirable fixture.

C. STORAGE SPACE

The availability of adequate and secure storage space was ranked as a category of importance to six of the eight personnel groups. Figure 8 shows that six groups registered a satisfaction level of below 3.0, which indicates that this could be a critical category. With the exception of the category of Personal Privacy this category ranked as the one with which the groups were most dissatisfied.

The URBS study found that individuals are now more affluent and that affluence means more paraphernalia such as typewriters, radios, record players, T.V.'s, tape recorders, etc., thus creating a storage problem [10]. The results of this survey show that a high percentage of personnel possess many of the aforementioned articles. The dissatisfaction with Storage Space confirms that there does indeed exist a current storage problem. This problem is closely related to the ability of individuals to secure their possessions in their quarters. The verbal interviews conducted by the thesis team revealed that the enlisted bachelor personnel were most concerned about the secure storage of personnel possessions and that it was one of the foremost areas of concern and dissatisfaction in on-base housing facilities. Storage Space is therefore a category to which close attention should be paid in the future design and renovation of bachelor housing. The security aspects will be addressed in Part E of this summary.

D. MESSING FACILITIES

Figure 8 shows that four personnel groups consider Messing Facilities a category of major importance to them. Of the four groups only one group, the on-base E-2 through E-4 personnel, expressed a satisfaction level below 3.0. The other groups showed a higher than 3.0 satisfaction level which indicates a general trend toward satisfaction with the current facilities. It should be noted that the other groups do not normally eat in the same facilities as the E-2 through E-4 on-base group. Considering that fact, designers should give this area greater consideration in the future in an effort to raise the satisfaction level of this rather large group of personnel. Related questions in the survey produced results showing that all groups desired the capability to prepare their own meals in their rooms or to have their meals prepared for them in a small messing facility with a capacity of serving fifty or fewer individuals. There was little preference expressed by any group to eat in a mess hall having a capacity of serving more than fifty personnel. The importance of Messing Facilities was previously brought out in the URBS study which emphasized the eating facility is one of the most important areas for social interactions between groups and individuals. The study further stated that the concept of the eating facility for the purpose of eating only is an outmoded and antiquated concept [10]. Given these facts it appears necessary that improvements must be made in the current messing facilities if individuals are to be provided a total environment with which they will be satisfied.

E. SAFETY AND SECURITY

The category of Safety and Security was one of two areas, the other being Personal Privacy, that was ranked as a category of importance to all personnel groups. It is further a category, as shown in Figure 8, in which five of the eight personnel groups expressed a degree of dissatisfaction with the safety and security afforded them in their quarters. Of the on-base groups, only the officer personnel had a satisfaction level above 3.0.

As was previously mentioned in Part C of this summary, much of the dissatisfaction in this category is due to the lack of adequate means for individuals to secure their personal belongings. The most frequently mentioned sources of discontent were the lack of tamper proof locks, easy access to room and the insufficient lockable storage space within rooms.

In the area of safety, many common complaints were made by those surveyed. The most frequent complaints were lack of adequate operable fire extinguishers, buildings of wooden construction which were considered to be fire hazards, and an inadequate number of fire evacuation routes.

Overall, the thesis team received the greatest number of written and verbal comments and complaints in the category of Safety and Security. This category is clearly one which should receive extensive and detailed consideration in the design of future bachelor housing facilities. This category also impacts upon the category of regulations and policies insofar as control of access to rooms and securing of personal possessions are concerned.

F. REGULATIONS AND POLICIES

Of the five personnel groups that ranked regulations and policies as a category of importance, only one group, the off-base male E-5 and E-6 personnel, had a satisfaction level above 3.0. The other four groups showed a definite trend toward dissatisfaction as evidenced by their low satisfaction levels shown in Figure 8.

Previous studies in areas related to bachelor housing found that individuals were very much concerned with the regulations and policies governing them and their housing facility. The URBS study stated that the sole purpose of residence halls is to serve, in the best possible way, the occupants who live therein. URBS further found that students are less ready to accept an imposed formula of living and that students want to express their own individuality [10]. The strong desire to be able to freely come and go from quarters and to be able to socialize and entertain in their quarters, expressed by all groups surveyed, shows that the Regulations and Policies category is one of foremost importance. It is the opinion of the thesis team that even the best living facility will be an undesirable place to live if the regulations and policies do not take the individual's needs and wants into consideration. URBS found that the more mature an individual becomes, the more self-directed he is, the less socializing he feels impelled to take part in and the more annoying residence hall regulations become [10]. While this point was not directly covered in the survey, comments and complaints during the verbal interviews conducted by the thesis team indicated that individuals felt that many restrictions and regulations were unnecessary, annoying, and a source

of dissatisfaction. The ASD(M) report found that a common complaint was that individuals could not entertain because of the many restrictions. The report also found that improved management (transportation, community access, restrictions) can reduce some dissatisfaction [13]. This finding is in consonance with the NASA statement that morale and efficiency are higher in situations with poor conditions and good leadership [15]. One appealing facet of Regulations and Policies is that they can be used to great advantage in improving the living environment at a minimum cost.

Although this is an area for consideration in future housing, changes and improvements could be made immediately to remove this source of dissatisfaction.

G. BUILDING MAINTENANCE

The category of building maintenance was considered to be one of the most important categories by only the off-base female personnel. Their satisfaction level of 3.13 indicates that they tend to be currently satisfied in this area and that it is not a critical areas as defined in this paper. While not ranked as one of the most important areas by the other personnel groups, it was found by the thesis team that during verbal interviews the area of building maintenance was frequently mentioned by on-base personnel as a source of dissatisfaction. Numerous incidents of broken bathroom fixtures, broken windows and doors which had gone for months without repair were mentioned during the verbal interviews. All groups indicated a willingness to participate in some form of a self-help maintenance program and a common comment was that an individual would personally fix a window or door if the materials were available to do so. It is apparent that improvements in this area would contribute to making the overall housing facility more attractive to the occupants and would remove a source of dissatisfaction.

H. BUILDING LOCATION

Building Location was not considered to be a category of importance by any of the personnel groups except for the females who lived off-base. Their satisfaction level was 3.75, which was the highest satisfaction level registered for that group in their five most important categories. Consequently, this category is not considered to be critical for this female group. Among the other groups, although location was not considered to be an area of importance, responses to related questions about location indicate that there are strong preferences in this category. For the most part, all groups indicated a preference to live off-base, either in the local community or near a gate to the base. Those who expressed a desire to live on-base wanted to live close to an off-base access or close to base support and recreational facilities. These responses are in consonance with the findings of NASA who found that reduced morale results when personnel consider themselves inconveniently out of range of recreation and activity centers, or culturally or socially confined [15]. Certainly, building location is therefore an important facet which should be considered in the design of the total environment for future bachelor housing.

I. BASE TRANSPORTATION

The only personnel group ranking this category as being a category of importance was the on-base female personnel group. Their satisfaction level was low at 2.14 and can be attributed to the distance that this particular group had to travel to and from work at NAS Lemoore and the Naval Postgraduate School.

Personal ownership of transportation in the form of automobiles or motorcycles may explain the lack of a high ranking of this area by the other personnel groups. Adequate on-base transportation facilities may also contribute to the lack of concern in this category.

J. PERSONAL PRIVACY

Personal Privacy was ranked by all personnel, except the on-base females, as the most important facet of their environment. In addition to being the most important category, Figure 8 shows that privacy is the category with which individuals are most dissatisfied. Only two of the eight groups had a satisfaction level higher than 3.0 and the remainder indicated dissatisfaction with the degree of privacy currently available to them.

The URBS study stated that a basic need of man is to be alone [10]. Current military bachelor housing does not provide the necessary privacy for enlisted groups and this is an area that requires and deserves great consideration in future housing design. The URBS finding that privacy is the most maligned of sensibilities in institutionalized housing is applicable to current military bachelor housing [10]. Even though all groups expressed a desire to be able to socialize and entertain, they also stated that they wanted to be able to have privacy when they desired it. There were several statements during verbal interviews to the effect that an individual could never be alone in current housing facilities and that this was a source of discontent. Many of the off-base personnel stated that their foremost reason for moving off-base was the lack of privacy in on-base quarters. Others stated that they would move off-base for the same reason but could not afford to move. From the questionnaire responses and verbal comments, it is apparently imperative that future housing provide adequate privacy for the users. Other improvements will be of little consequence if privacy is not available.

K. GENERAL COMMENTS

The ASD(M) report states that military bachelor housing loses sight of the requirement for permanent living functions, and is built to the lowest common denominator, i.e., all bachelors are treated as transients. The report further stated that over 50% of the total bachelor population consider the government housing is unsatisfactory [13]. The expressed dissatisfaction in many categories by the respondents in this survey confirms the ASD(M) statements.

The NASA report found that man's adaptive capacities are limited [15]. URBS stated that structures incapable of responding to changing attitudes of occupants are a cause for a greater frequency of occupants moving out [10]. If the military is going to provide bachelor housing which satisfies the needs and desires of the users, that housing must be designed in such a manner that it adapts to the user, rather than forcing the user to adapt to the housing. To this end, this paper has determined specific categories of importance to the users which must be incorporated in future bachelor housing.

V. RECOMMENDATIONS

As a result of this study the following recommendations are made.

- A. The data base should be expanded in the areas of the E-7 through E-9 males, female officer and female enlisted personnel groups.
- B. The results of this study should be considered in the design of future Navy bachelor quarters.
- C. After incorporation of study findings a follow-on survey should be conducted to insure that user requirements have been met.
- D. A continuing effort should be made to determine changes in user attitudes, preferences, desires and needs.
- E. Current policies and regulations should be examined to determine feasibility of making immediate changes which will result in a higher degree of user satisfaction
- F. The data base acquired during this study should be maintained, expanded and used as the basis for continued study in the area of Navy bachelor housing user requirements.

APPENDIX A

Human Factors Information Taxonomy for Architectural Design Programs

Facility Characteristics

Facility Units. Specify the facility units that must be developed. The listing of facility units should be as inclusive as possible. Where possible, general units, such as playground, office, and equipment storage should be divided into subunits to facilitate subsequent planning and analytic activities.

User Categories. For each proposed facility unit, develop user categories such as visitors, shoppers, office staff, maintenance personnel, instructors, medical staff, and patients. Specify the anticipated number of individuals in each user category.

Furniture, Fixture, Equipment, and Storage Unit Allocations. Specify the general types of furniture, fixtures, equipment, and storage units that will be needed for each user category in all facility units.

Facility Management Plan. Obtain or develop policies, regulations, and maintenance and operational schedules that will be in effect during the first period of facility use and into the foreseeable future.

Alteration Contingencies. Identify those events, and the likelihood of their occurrence, which might necessitate refurbishing, modifying, extending, or reducing the original facility.

Safety and Security. Give special consideration to safety and security by identifying possible events which, though of low probability or occurrence, must be considered significant for facility design. Identify special user groups and their particular needs, such as aged, disabled, visitors and children.

Sociocultural Character

Cultural Phenomenon. Describe the facility users' cultural character in terms of the varied phenomenon that will be influenced by the desired facility. Stress customs, styles, norms, and practices. Specify characteristics in terms of stability, variability, and trends. Specify various resistance-to-change possibilities.

Social Organization. Develop a sociogram which identifies the individuals, groups, and organizations which will influence or be influenced by facility activities. Emphasize the various social patterns significant for facility design.

Utility and Satisfaction Priorities. According to users' preferences and needs, identify the specific facility characteristics which might influence acceptance and utility.

Effects of Non-Implementation. Expenditures and Facility allocations in support of sociocultural requirements may at times be subject to cost or facility allocation reductions. Specify the utility, performance, and satisfaction losses which might occur if these design considerations were not included.

Scenarios. i.e., "A Day in the Life of LT(jg) Smith." Where behavioral, social or cultural subtleties exist, scenario presentations should be developed which capsule user behavior.

User Activity Support

User Activity Descriptions. For each user category in all facility units, describe user action, movement, and communications behaviors requiring facility support. Where possible this activity analysis should lead to the development of a flow diagram describing sequential user behaviors. Specify the behavioral sequences within a time-profile wherever possible. Produce detailed task analyses here warranted on the basis of extremely complex activities.

Furniture, Fixtures, Equipment, and Storage Unit Design Criteria.

Based upon the sociocultural character of users, accepted specifications and standards, and user activity descriptions, specify permanent or mobile items required for each facility unit. Identify design characteristics which could influence performance, satisfaction, and utility. Develop design criteria for each required item which responds to this analysis, and to maintainability, durability, serviceability, safety, cost, availability, anthropometric and installation considerations.

Adjacency Requirements. Based upon activity description particularly for identified activities requiring within-unit movement or face-to-face communications, or for those which produce unwanted effects such as noise, specify the within-unit furniture, fixture, equipment, storage, and user adjacency requirements.

Ambient Environmental Criteria. On the basis of accepted specifications and standards, and with full consideration of the effects of temperature, humidity, air-flow, noise, vibration, motion, illumination, and climatic conditions on performance and acceptability, specify ambient environmental criteria for facility units.

Circulation

User Flow. Specify the anticipated between-unit user flow in terms of such considerations as numbers, frequency, and speed. Specify points of origin and termination by unit nomenclature.

Equipment and Material Flow. Identify the equipment and material that will be transported between facility units. Specify the physical characteristics of all transported items, special handling requirements, transportation modes, points of origin and termination, numbers, frequency, and speed.

Information Flow. Identify all possible information exchange modes. Specify between-unit linkage requirements. Specify anticipated information formats, volume, frequency, and content.

Movement Priorities. Establish movement priorities for user, equipment, material, and information flow.

Circulation Pattern Summary. Summarize all flow information into circulation pattern options which aid in fulfilling activity and safety requirements.

Spatial Configurations and Arrangements

Space Requirements. Specify the space requirements for each facility unit approximating area, volume, and other space attributes.

Unit Adjacencies. Establish a unit adjacency guideline based on user activities, support systems requirements (mechanical, electrical, etc.) and environmental compatibility (privacy, noise generation, heat generation, etc.).

Candidate Spatial Configurations and Arrangements. To the level of detail contained in facility characteristics, sociocultural character, user activity support, and circulation information, develop as many candidate spatial configurations and arrangements as warranted. Seek to make each presentation generically different. Avoid variations of the same basic concept. Based on growth and mobility contingencies specify alteration possibilities. Where necessary, as a result of information developed, revise facility unit listing and nomenclature. It may be necessary to add more units or delete or subdivide established units.

Surfaces.

User Effects Possibilities. Identify surface design characteristics which could influence user activity, performance, satisfaction, and acceptance. Emphasize critical need fulfillment and sociocultural character enhancement.

Color, Texture, and Patterns. Develop or critique proposed color, texture, and pattern schemes from the perspective of user utility and satisfaction. Provide appropriate design criteria and rationale for accepting or modifying specifications. Based upon activity, environmental, and movement information, identify items requiring special durability, installation and maintainability considerations.

Convenience, Safety, and Security. Identify special user groups and activities which require design consideration in terms of special fixtures and hardware, placement, color-coding, surface hardness, etc. Establish design criteria as required.

Site and Location

Facility Orientations and Adjacencies. Specify facility orientations and adjacencies and additional facility requirements which can enhance activities and user acceptance and satisfaction. These specifications should be based on facility characteristics, configurations, and arrangements, inter-facility flow densities and directions, safety considerations, climatic conditions, elevations, distances, etc.

Area and Regional Integration. Describe facility surroundings in terms of services, character, historic and regional traditions, etc. Study area and regional planning and preferences, seeking to identify a basis for achieving sociocultural acceptability.

Transportation Interface. Identify interface possibilities between facility and available transportation modes. Specify support facility requirements needed to assure an efficient and acceptable transportation mode interface.

APPENDIX B

NAVY BACHELOR QUARTERS INFORMATION SURVEY

This questionnaire was prepared by, and is for the sole use of, the Naval Postgraduate School and the Naval Facilities Command.

The opinions and attitudes obtained from Navy Bachelors through this questionnaire will be forwarded to the Naval Facilities Command to be considered in the design and construction of future Navy Bachelor Quarters.

GENERAL INFORMATION

1. Duty Station _____
2. Male _____ Female _____ Age _____
3. Education Completed (check one)
_____ Grade School _____ Less Than 2 yrs. College
_____ High School _____ More Than 2 yrs. College
_____ Trade School _____ College Graduate
4. RANK/RATE _____
5. Service Speciality _____
(Aviation, Surface, Submarine, etc.)
6. Years in Service _____
Years in BOQ/BEQ _____
7. Are You Presently Living In BOQ/BEQ? (check one)
YES _____ NO _____
8. Why Did You Join The NAVY?
9. Do You Plan To....(check one)
 - a. Get out of the NAVY at the end of commitment
 - b. Make the NAVY your career
 - c. Undecided

GENERAL SATISFACTION

I. As Pertains To Your Present Living Quarters Indicate Your Overall Degree of Satisfaction In The Following Ten Categories, Using The Following Index.

1	2	3	4	5
VERY DISSATISFIED	DISSATISFIED	INDIFFERENT	SATISFIED	VERY SATISFIED

INDEX

CATEGORY

_____	Furniture (Desk, Bed, Chair, Table, etc.)
_____	Fixtures (Carpets, Curtains, Lamps, Heads, etc.)
_____	Personal Storage Space
_____	Messing Facilities
_____	Safety/Security
_____	Regulations/Policy
_____	Building Maintenance
_____	Building Location
_____	Availability of Base Transportation
_____	Personal/Individual Privacy

GENERAL SATISFACTION

II. Rank The Following Items From 1 to 10 In Their Degree of Importance To You As An Individual, Number 1 Being Most Important Number 10 Least Important.

RANK	ITEM
_____	Furniture
_____	Fixtures
_____	Personal Storage Space
_____	Messing Facilities
_____	Regulations/Policies
_____	Building Maintenance
_____	Building Location
_____	Availability of Base Transportation
_____	Personal/Individual Privacy
_____	Safety/Security

FURNISHINGS PREFERENCE

PART I: FURNITURE

Indicate Your Degree of Desirability In The Following Furnishings

By Circling 1 Through 5 OR Selecting One Item As Appropriate.

1 _____ 2 _____ 3 _____ 4 _____ 5

Highly Undesirable Undesirable Indifferent Desirable Highly Desirable

<u>ITEM</u>	<u>INDEX</u>	<u>BUILT-IN</u>	<u>MOVABLE</u>
Desk (With Chair)	1 2 3 4 5		
Chair (Lounge Type)	1 2 3 4 5		
Card Table	1 2 3 4 5		
Coffee Table	1 2 3 4 5		
End Table	1 2 3 4 5		
Chest of Drawers	1 2 3 4 5		
Book Case	1 2 3 4 5		
Wall Shelves	1 2 3 4 5		
Sofa	1 2 3 4 5		
Refrigerator	1 2 3 4 5		
Hot Plate	1 2 3 4 5		
Wet Bar	1 2 3 4 5		
Other (Specify)	1 2 3 4 5		
	1 2 3 4 5		
	1 2 3 4 5		
	1 2 3 4 5		

BED (CHOOSE ONE TYPE)	CHECK ONE	BUILT-IN	MOVABLE
Bunk Type			
Single Type			
Hide-A-Bed (Sofa)			
Fold-Out (Hidden In Wall)			
Hollywood Type			

FURNISHINGS PREFERENCE

PART II: FIXTURES

Indicate Your Degree Of Desirability In The Following Fixtures

By Circling 1 Through 5 Or Selection As Appropriate.

1	2	3	4	5
HIGHLY UNDESIRABLE	UNDESIRABLE	INDIFFERENT	DESIRABLE	HIGHLY DESIRABLE

ITEM	DESIRABILITY				
Telephone (in room)	1	2	3	4	5
Interroom/Piped Music	1	2	3	4	5
Movable Partitions	1	2	3	4	5
Lavatory (in room)	1	2	3	4	5

Window Covers:
(pick one)

Venetian Blinds	
Shades only	
Curtains only	
Shades and Curtains	
Blinds and Curtains	

Type Bath:
(pick one)

Shower	
Tub	
Combination	

PERSONAL STORAGE REQUIREMENTS

PART I: OUT OF ROOM STORAGE

List Below Those Items You Would Like to Store In A Secure Space
Outside Your Personal Living Space. (Winter Clothes, Luggage,
Athletic Gear, Sports Equipment, etc.)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Do You Own: (check those appropriate)

- _____ Car
_____ Motorcycle
_____ Bicycle
_____ Boat

PART II: IN ROOM STORAGE

Indicate From The Below List Those Items Which You Now Have In
Your Possession.

- | | |
|------------------------|---|
| _____ Television Set | _____ Record Collection |
| _____ Record Player | _____ Tape Collection |
| _____ Tape Deck | _____ Speakers |
| _____ Sports Equipment | _____ Other (Specify Below or
on Back of Page) |

SAFETY/SECURITY

1. In Your Opinion Do The Living Quarters Which You Presently Occupy
Incorporate Adequate Safety Precautions? (Circle One)

YES

NO

NO OPINION

If "NO" - Why Not?

2. In Your Opinion Do The Living Quarters Which You Presently Occupy
Incorporate Adequate Security For Your Personnel Possessions?
(Circle One)

YES

NO

NO OPINION

If "NO" - Why Not?

BUILDING OCCUPANCY

1. Do You Prefer To Live In A Building Occupied By: (Circle One)
 - A. Only Members Of Your Own Sex
 - B. Members Of Both Sexes
2. Do You Prefer To Live In A Building Occupied By: (Circle One)
 - A. Only Members Of Your Own Pay Grade
 - B. Only Members of Approximately Your Own Pay Grade
 - C. Members Of All Pay Grades

BUILDING/ROOM OCCUPANCY

1. Do You Prefer Your Living Quarters To Be Located: (Check As Appropriate)
 - _____ A. ON-BASE
 - _____ 1. Near Where You Work
 - _____ 2. Near Base Facility
 - _____ 3. Near An Off-Base Access
 - _____ B. OFF-BASE
 - _____ 1. Near Main Gate
 - _____ 2. In the Local Community
2. Do You Prefer Your Living Quarters To Be: (check one)
 - _____ A. ON THE GROUND FLOOR
 - _____ B. ABOVE THE GROUND FLOOR

SOCIOLOGICAL

This Portion Of The Questionnaire Pertains To Sociological Concerns. Questions Address Socializing, Individual Expression, An In The Last Part, Solicit Your Personal Opinion About Your Attitudes Toward Living Environments. Statements In Each Area Refer To What YOU Would Like OR Not Like In a Living Environment.

A. Socializing: Respond to Each Of The Following Statements Using

The Scale Of:

1	2	3	4	5
HIGHLY				HIGHLY
UNDESIRABLE	UNDESIRABLE	INDIFFERENT	DESIRABLE	DESIRABLE

Indicate Your Response At The End Of Each Statement.

1. Being Able To Come And Go From Your Quarters As You Please
During Non-Duty Hours. _____

2. Have The Feeling Of Being Associated With Your Duty
Activities In Your Quarters. _____

3. Have The Opportunity To Socialize Or Entertain In Your
Quarters. _____

4. Be Able To Have Only Limited Privacy When You Want. _____

5. Have The Option Of Being Alone Or Socializing In Your
Quarters. _____

6. Having Limited Control Over The Noise And Lighting
In Your Quarters. _____

Now, Please Rank The Six Statements On The Previous Page In Order Of Importance To You Regardless Of Whether You Felt The Item Was Highly Desirable OR Highly Undesirable. Enter Your Response From Left To Right Starting With The MOST Important Using the Item Number.

MOST
IMPORTANT

LEAST
IMPORTANT

B. Individual Expression:

Respond To The Following Statements Using The Same Scale From Highly Desirable To Highly Undesirable, Indicating Your Response At The End Of Each Statement.

1. Being Limited To Using Installed Storage Facilities For Clothes, Books, T.V. and Stereo. _____
2. Maintain Uniformity Throughout The Living Facility For Furniture Placement. _____
3. Be Able To Install Rugs, Pictures and Decorations In Your Quarters. _____
4. Use Only Issue Furniture In Your Quarters. _____
5. Being Required To Paint Your Quarters If You Desire To Change The Color Scheme. _____
6. Being Allowed To Build Shelves OR Bookcases For Personal Items. _____

Again, Please Rank The Above Statements In Order Of Importance To You Regardless Of Whether You Felt The Item Was Highly Desirable Or Highly Undesirable. Write Your Response From Left To Right Starting With The MOST Important Item.

MOST IMPORTANT						LEAST IMPORTANT
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

C. Preference Ranking:

Of The Twelve Statements Contained in (A) Socializing and (B) Individual Expression Above, List The Three Statements Which Deal With The Areas You Consider To Be Most Important To You. Designate The Statements By Topic and Statement Number. For Example, A-3 Would Be The Third Statement In Socializing. List These In Order Of Importance To You From Left To Right.

#1

#2

#3

D. Opinions:

This Section Is Designed To Solicit Your Personal Opinions And Attitudes Toward General Areas Related to Living Environments.

1. Do You Feel That Individuals Should Be Held Responsible For Intentional Damage To Living Facilities (circle one)

YES

NO

NO OPINION

2. To What Degree Would You Voluntarily Participate In A Self-Help Program To Fix Up Your Living Facility. (select one).

a. Would Not Participate

b. Work In My Personal Area Only

c. Fully Participate.

3. To What Degree Do You Feel You Should Be Responsible For the Exterior Upkeep Of Your Living Facility Insofar As Landscaping And Grasscutting Is Concerned. (Select one)

- a. Responsible For Doing A Fair Share Of the Work
- b. Responsible For An Assigned Area.
- c. No Upkeep Responsibility

E. So Far In This Section We Have Dealt With Some Areas Related To Your Preferences In Socializing And Individual Expression. Please Review Those Areas To See If We Have Included All Items Which You Consider To Be Important In Your Living Environment. If There Are Others Or Items You Consider To Be Of Major Importance, State These Areas In The Space Below And Give An Indication Of Their Relative Importance To The Areas Covered In This Section.

LEISURE ACTIVITIES

From The Below List Of Leisure Activities, Select Five (or more)
And Rank Them In Order Of Importance To You. (#1 Most Important,
#2 Next Important, etc.)

_____ Pool/Billiards	_____ Golf
_____ Ping-pong	_____ Volley Ball
_____ Card Games	_____ Basketball
_____ Reading	_____ Baseball
_____ Watching T.V.	_____ Football
_____ Music (playing-listening)	_____ Walking, Hiking
_____ Model Building	_____ Studying
_____ Swimming	_____ Bowling
_____ Exercising	_____ Movies
_____ Social Activities	_____ Tennis
_____ Other (Specify On Back Of Page)	

MESSING FACILITIES

Check Appropriate Blocks To Indicate Your Personal Messing Preference.

	PREPARED BY YOURSELF	PREPARED BY OTHERS	DINING HALL		IN YOUR ROOM
			SMALL (LESS THAN 50)	LARGE (MORE THAN 50)	
BREAKFAST					
BRUNCH					
LUNCH					
EVENING MEAL					

GENERAL FACILITIES

From The Below List Of General Facilities, Select Five (or more)
That You Personally Would Like To Have Located In Close Proximity To Y
Your Living Quarters. Rank Them In Order Of Importance. (#1 Most
Important, #2 Next Important, etc.)

_____ Bowling Alley	_____ Reading Room
_____ Sauna Room	_____ Music Room
_____ Steam Room	_____ Visitor's Lounge
_____ Swimming Pool	_____ Laundry Facilities (Washer & Dryer)
_____ T.V. Room	
_____ Card Room	_____ Volley Ball Court
_____ Ping-pong/Pool Room	_____ Tennis Court
_____ Other (Specify Below)	_____ Putting Green

LIST OF REFERENCES

1. Brooks, M. J. and Kaplan, A., "Space Planning and Efficient Behavior", Human Factors, Vol. 14, No. 5, October 1972.
2. Byington, M. R., CDR. U.S.N., "Shipboard Habitability", Naval Institute Proceedings, January 1971.
3. Edwards, F. L., MAJ. U.S.M.C., "Individual Privacy Advocated", Marine Gazette, March 1971
4. Ewald, W. R., (edit.), Environment for Man, 1967 University of Indiana Press.
5. Goffman, E., The Presentation of Self in Everyday Life, Doubleday, 1959.
6. Proshansky, H. M.; Ittelson, W. H.; Rivlin, L. G.; (edits), Environmental Psychology, Man and His Physical Setting, Holt, Rinehart, and Winston, Inc., 1970.
7. Sommer, R., Personal Space, 1969.
8. Steidl, R. E., "Implications for Environmental Design", Human Factors, Vol. 14, No. 5, October 1972.
9. Summary and Review of Studies of the VOLAR Experiment, 1971, Technical Report HumRRO-TR-72-18, May 1972.
10. "University Residential Building System", A Project of University of California, supported by Educational Facilities Laboratories, Inc., April 1969.
11. "University Residential Building System", Phase III Report, A Project of the University of California, February 1970.
12. Wohlwill, J. F., Carson, D. H. (edit.), Environment and the Social Sciences, 1969.
13. Report of ASD(M) Task Force on Bachelor Accomodations, May 1966.
14. Office of Naval Research Contract N00014-69-0290, Planning the Man/Environment Interaction, April 1970.
15. NASA CR-1084, The Intangibles of Habitability During Long Duration Space Missions, June 1968.

BIBLIOGRAPHY

1. Bayer, G. H., Housing and Society, Macmillan, 1965.
2. Davis, G., Reizer, R., "Architectural Determinants of Student Satisfaction in College Residence Halls", Proceedings of Second Annual Conference of Environmental Design Research Association, Pittsburg, October, 1970.
3. Ewald, W. R., (edit.), Environment and Change, University of Indiana Press, 1968.
4. Ewald, W. R., (edit.), Environment and Policy, University of Indiana Press, 1968.
5. Goode, W. J., Hatt, P. K., Methods in Social Research, McGraw-Hill, Inc., 1952.
6. Hall, E. T., The Hidden Dimension, Doubleday and Company, Inc., 1966.
7. Lindheim, R., "Putting Research to Work", American Institute of Architect's Journal, Vol. XLV, No. 2, February, 1965.
8. National Observer, "Dormitory Life", October 28, 1972.
9. Noble, J., Ash, J., "Appraisal of User Requirements in Man's Housing", The Architect's Journal, Vol. 144, No. 8, August 14, 1966.
10. Perin, With Man in Mind, MIT Press, 1970.
11. Willis, H., "Designing for Privacy", The Architect's Journal, Vol. 137, No. 22, July 5, 1966.

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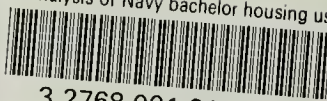
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